PHxx series

User and Installation manual

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BARCO
Visibly yours

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Federal Communications Commission (FCC Statement)

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area may cause harmful interference, in which case the user will be responsible for correcting any interference at his own expense

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment

EN55022/CISPR22 Class A ITE (Information Technology Equipment)

Class A ITE is a category of all other ITE which satisfies the class A ITE limits but not the class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use:

Warning : This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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1. SAFETY

About this chapter

Read this chapter attentively. It contains important information to prevent personal injury while installing and using a PHxx series projector. Furthermore, it includes several cautions to prevent damage to the PHxx series projector. Ensure that you understand and follow all safety guidelines, safety instructions and warnings mentioned in this chapter before installing your PHxx series projector. After this chapter, additional “warnings” and “cautions” are given depending on the installation procedure. Read and follow these “warnings” and “cautions” as well.

The User Manual is very important. Please read the User Manual before using the product. Keep the manual for reference.

Access to User Manual

The User Manual is available on the CD which is shipped with the product. Perform the following to access the User Manual from the CD:

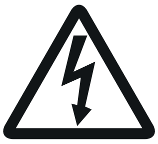
1. Insert the CD into the CD-ROM drive of a computer.
2. Browse to the root folder of the CD and click on “startup.exe” (only in case the CD doesn’t start automatically). As a result an HTML window will open in the Internet Browser.
3. Select your product and navigate to the User Manual.
4. Click on the PDF link to open the User Manual.

About the term PHxx series

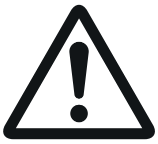
The following projectors are included in the term PHxx series : PHWU-81B, PHWX-81B and PHXG-91B

1.1 General considerations

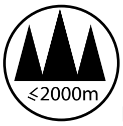
Safety labels



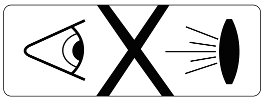
The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



Do not use above 2000m above sea level.



Do not look into the projector’s lens when the lamp is on. The bright light may hurt and damage your eyes.

WARNING: Ensure you understand and follow all the safety guidelines, safety instructions, warnings and cautions mentioned in this manual.

WARNING: To prevent fire or shock hazard, do not expose the projector to rain or moisture.

WARNING: To prevent electric shock, do not use this (polarized) plug with an extension cord; receptacle or other outlet unless the blades can be fully inserted to prevent blade exposure.

CAUTION: Not for use in a computer room as defined in the Standard for the Protection of Electronic Computer/ Data Processing Equipment, ANSI/NFPA 75.

1.2 Using projector in Europe

Compliance notice

This projector complies with the requirements of the EC Directive 2004/108/EC “EMC Directive” and 2006/95/EC “Low Voltage Directive”.

Warning

This is a EN55022 Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

This product may cause interference if used in residential areas. Such use must be avoided unless the user takes special measures to reduce electromagnetic emissions to prevent interference to the reception of radio and television broadcasts.

Maschinenlärminformations-Verordnung - 3. GPSGV, der höchste Schalldruckpegel beträgt 70 dB(A) oder weniger gemäss EN ISO 7779

1.3 Compliance notice of FCC

FCC notice

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by Barco could void the user’s authority to operate this equipment.

1.4 Important safety instructions

General

- All the safety and operating instructions should be read before operating the projector.
- The safety and operating instructions should be retained for future reference.
- All warnings on the projector and in the operating instructions should be adhered to.
- All operating instructions must be followed.

To prevent personal injury

- **Mercury Vapor Warnings**: Keep the following warnings in mind when using the projector. The lamp used in the projector contains mercury. In case of a lamp rupture, explosion there will be a mercury vapor emission. In order to minimize the potential risk of inhaling mercury vapors:
  - Ensure the projector is installed only in ventilated rooms.
  - Replace the lamp module before the end of its operational life.
  - Promptly ventilate the room after a lamp rupture, explosion has occurred, evacuate the room (particularly in case of a pregnant woman).
  - Seek medical attention if unusual health conditions occur after a lamp rupture, explosion, such as headache, fatigue, shortness of breath, chest-tightening coughing or nausea.
- Caution: High pressure lamp may explode if improperly handled. Refer servicing to qualified service personnel. The customer should never attempt to disassemble the lamp casing or to dispose of the lamp casing other than by returning it to Barco.
- Do not place this projector on an unstable cart, stand, tripod, bracket or table. Use only with a cart, stand, tripod bracket, or table recommended by the manufacturer or sold with the projector. Any mounting of the appliance should follow the manufacturer's instructions and should use a mounting accessory recommended by the manufacturer.
- An appliance and cart combination should be moved with care. Quick stops, excessive force and uneven surfaces may cause the appliance and cart combination to overturn.
- Do not place the projector on uneven surface. Place the projector on a leveled and stable surface only. Please do not place the projector on unstable surfaces. The product may fall, causing serious damage to it and possible injury to the user.
- Warning: high intensity light beam. Do not look into the lens when it is operating. It may hurt your eyes. Never let children look into the lens when it is on.
- Do not touch the exhaust vents and bottom plate, which become hot. Do not touch them or put other equipment in front of the exhaust vents. The exhaust vents and bottom plate, when heated, may cause injury or damage to other equipment. Also, do not set the projector on the desk which is easily affected by heat.
- Do not look into the exhaust vents when projector is operating. Heat, dust, etc. may blow out of them and hurt your eyes.
- Do not insert your fingers in the space between the lens and the cabinet. The lens may shift causing injury or damage to the projector.
- **Exposure to UV radiation**: Some medications are known to make individuals extra sensitive to UV radiation. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends occupational UV exposure for an-8hour day to be less than 0.1 microwatts per square centimeters of effective UV radiation. An evaluation of the workplace is advised to assure employees are not exposed to cumulative radiation levels exceeding these government guidelines.
- **Warning: Protection from ultraviolet radiation**: Do not look directly in the light beam. The lamp contained in this product is an intense source of light and heat. One component of the light emitted from this lamp is ultraviolet light. Potential eye and skin hazards are present when the lamp is energized due to ultraviolet radiation. Avoid unnecessary exposure. Protect yourself and your employees by making them aware of the hazards and how to protect themselves. Protecting the skin can be accomplished by wearing tightly woven garments and gloves. Protecting the eyes from UV can be accomplished by wearing safety glasses that are designed to provide UV protection. In addition to the UV, the visible light from the lamp is intense and should also be considered when choosing protective eye wear.

To prevent fire hazard

- Do not place flammable or combustible materials near the projector!
- Do not face the projector lens to the sun. It can lead to fire.
- Slots and openings in the cabinet are provided for ventilation, ensuring reliable operation of the projector and to protect it from overheating. Do not block these openings or allow them to be blocked by placing the projector on a bed, sofa, , carpet, rug, or bookcase. Ensure that there is adequate ventilation and that the manufacturer's instructions have been adhered to.
- Use correct voltage. If you use incorrect voltage, it can lead to fire.
- Do not connect multiple electrical appliances to a single wall outlet. It can lead to fire.
- Do not extend the power cord. It can lead to fire.
- Do not use flammable solvents (benzene, thinner, etc.) and flammable aerosols near the projector. Flammable substances may ignite causing fire or breakdown because the temperature inside the projector rises very high while the lamp is illuminating.
- Be sure to unplug the power cord from the wall outlet if the projector will not be used for a long period of time. Otherwise, it may cause fire. Important safeguards (continued)
- Do not use the projector in the following locations and manners, which may cause fire or electric shock.
  - In a dusty or humid place.
  - In a sideways position, or with the lens facing down.
  - Near a heater.
  - In an oily, smoky, or damp place such as a kitchen.
  - In direct sunlight.
  - Where the temperature rises high, such as in a closed cabinet.
  - Where the temperature is lower than +41ºF (or +5ºC) or higher than +104ºF (or +40ºC).
- Do not cover the lens with the lens cap while the lamp is on.

To prevent the risk of electrical shock

- Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.
- Use 100-240 V AC 50/60 Hz to prevent fire or electric shock.
- The power cords for use in the U.S., Europe or China are included with this projector. Use the appropriate one for your country.
- This apparatus must be grounded (earthed) via the supplied 3 conductor AC power cable. If none of the supplied power cables are the correct one, consult your dealer.
- This projector should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your appliance dealer or local power company.
- Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and points where they exit from the appliance. Do not put the power cord under a carpet.
- This projector uses the power plug of 3-pin grounding type. Do not take away the grounding pin from the power plug. If the power plug doesn't fit your wall outlet, ask an electrician to change the wall outlet.
- The provided power cord for the U.S. is rated at 120 V. Never connect this cord to any outlet or power supply using other voltages or frequencies than rated. If you use a power supply using other voltage than rated, prepare an appropriate power cord separately.
- If the power cord should be damaged, contact your dealer for replacement because it may cause fire or electric shock.
- Do not modify or alter the power cord. If the power cord is modified or altered, it may cause fire or electric shock.
- Do not overload wall outlets and extension cords as this can result in a fire or electric shock.
- In order to ensure the safety in case of trouble with the projector, use an electrical outlet having an earth leakage breaker to supply the power to the projector. If you do not have such outlet, ask your dealer to install it.
- Plug in the power cord firmly. When unplugging, hold and pull the power plug, not the power cor
- Do not plug in or out the power cord with your hand wet. It may cause electric shock.
- When you move the projector, turn off the power, unplug the power cord from the wall outlet, and then remove the connected cords. Otherwise, the power cord may be damaged, resulting in fire or electric shock.
- If dust or metallic substance is on or around the pins of the power plug, unplug the power cord and clean it using a dry cloth. If you continue to use the projector without cleaning, it may result in fire or electric shock. Clean the power plug periodically at least once a year.
- Never push objects of any kind through openings of this projector as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock.
- Never spill liquid of any kind on the projector.
- Do not operate if smoke, strange noise or odor comes out of your projector. It might cause fire or electric shock. In this case, unplug immediately and contact your dealer.
- This projector contains high voltage circuitry. An inadvertent contact may result in an electric shock. Except as specifically explained in the User Manual do not attempt to service this product by yourself. Please contact your dealer when you want to fix, adjust or inspect the projector.
- Do not modify this equipment. It can lead to fire or electric shock.
- Do not keep using the damaged projector. If the projector is dropped and the cabinet is damaged, unplug the projector and contact your dealer for inspection. It may lead to fire if you keep using the damaged projector.
- Be sure to unplug the power cord from the wall outlet if the projector is fractured or deformed. Otherwise, it may result in fire or electric shock. Ask your dealer for repair.
- Do not place a container containing water or other liquid on the projector. If water spills on or enters the projector, it may result in fire or electric shock.
- Keep foliage plants and pets away from the projector. The temperature around the exhaust vents and that of the cabinet on the top of the exhaust vents become high. Take special care for small children.
- The attached power cord is to be used exclusively for this product. Never use it for other products.
- The socket-outlet shall be installed nearby the equipment and shall be easily accessible.
- Use the attached specified power supply cord. If you use another power supply cord, it may cause interference with radio and television reception.

To prevent projector damage

- Unplug this projector from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.
- Do not use this projector near water or in contact with water.
- Do not use the projector with condensation on it. It can lead to breakdown or other failure.
- Never place the projector in direct sun light. Sun light on the lens can severely damage the Digital Mirror Devices™ in which case there is a loss of warranty.
- Do not block the intake and exhaust vents. If they are blocked, heat may be generated inside the projector, causing deterioration in the projector quality and fire.
- **Special care for Laser Beams**: Special care should be used when DLP® projectors are used in the same room as high power laser equipment. Direct or indirect hitting of a laser beam on to the lens can severely damage the Digital Mirror Devices™ in which case there is a loss of warranty.
- Save the original shipping carton and packing material. They will come in handy if you ever have to ship your equipment. For maximum protection, repack your set as it was originally packed at the factory.
- For safety's sake, refrain from setting the projector at any place subjected to high temperature and high humidity. Please maintain an operating temperature, humidity, and altitude as specified below.
    - Allowable operating temperature is +41°F (+5°C) to +104°F (+40°C).
    - Operating humidity: between 30% and 90%
    - Be sure to use this projector at an altitude of less than 2000 meters.

- Never put any heat-producing device under the projector so that the projector does not overheat.
- Do not attach the projector to a place that is unstable or subjected to vibration.
- Do not install the projector near any equipment that produces a strong magnetic field. Also refrain from installing near the projector any cable carrying a large current.
- Place the projector on a solid, vibration free surface; otherwise it may fall, causing serious injury to a child or adult, and serious damage to the product.
- Do not stand upright the projector; it may fall, causing serious injury and damage to the projector.
- Slanting the projector more than ±10° (right and left) or ±15° (front and rear) may cause trouble or explosion of the lamp.
- Do not place the projector near air-conditioning unit, heater, or humidifier to avoid hot or moist air to the exhaust and ventilation hole of the projector.
- Do not place the projector in the following places. Otherwise, a short circuit, heat generation, or melting of the power cord coating may occur, causing fire, electric shock, product failure, or deformation.
    - Outdoors or non air-conditioned place.
    - Place where a gas such as a hydrogen sulfide is generated (i.e. hot spring).
    - Place where there is too much salt such as near the coast.
- Do not put any object that is heavy or larger than the outer frame on the projector. Otherwise, the object may fall losing its balance and cause injury.
- Do not subject the projector to strong shocks or vibrations. Do not handle the projector roughly. The projector may be damaged, resulting in fire or electric shock.
- Do not replace the lamp immediately after using the projector because the lamp would be extremely hot and it may cause burns.
- Depending on the installation conditions, warm air that is emitted from the exhaust vents may flow into the intake vent, causing the projector to display "HIGH TEMP WARNING" and then stop projecting images.
- Placing the projector directly on a carpet impairs ventilation by the fans, causing damage or failure. Put a hard board under the projector to facilitate ventilation.
- Place the projector at least 50 cm (or 20 inches) away from the wall to prevent the intake vents and the exhaust vents that emit hot air from being blocked.

About batteries

- Use of a battery of wrong type may cause explosion.
- Only Carbon-Zinc or Alkaline-Manganese Dioxide type batteries should be used.
- For disposal of used batteries, always consult federal, state, local and provincial hazardous waste disposal rules and regulations to ensure proper disposal.
- Before you dispose of the batteries, insulate them by placing insulation tape on the positive (+) and negative (-) terminals. If you dispose of the batteries together with other conductive objects such as a metal piece, they may short out, resulting in fire or explosion.
- Batteries may explode if misused. Do not recharge, disassemble, or heat the batteries, or put them into fire or water.
- Be sure to handle the batteries according to the instructions.
- Load the batteries with its positive (+) and negative (-) sides correctly oriented as indicated on the remote control.
- Keep batteries out of reach of children and pets. If children swallow the battery, see a doctor immediately.
- Remove the batteries, if the remote control is not used for a long time.
- Do not combine a new battery with an old one.
- If the solution of batteries comes in contact with your skin or clothes, rinse with water. If the solution comes in contact with your eyes, rinse them with water and then consult your doctor.
- Do not carry or store the batteries together with metallic ballpoint pens, necklaces, coins, or hairpins. Otherwise, they may short out, causing explosion or liquid leakage and resulting in fire or injury.
- Do not store the batteries where they are exposed to direct sunlight or subjected to high temperature and high humidity. High temperature and high humidity may cause corrosion or liquid leakage.

On servicing

- Do not attempt to service this projector by yourself. Refer all servicing to qualified service personnel.
- Unplug this product from the wall outlet and refer servicing to qualified service technicians under the following conditions:
    - When the power cord or plug is damaged or frayed.
    - If liquid has been spilled into the equipment.
    - If the product has been exposed to rain or water.
    - If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions since improper adjustment of the other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.
    - If the product has been dropped or the cabinet has been damaged.
    - If the product exhibits a distinct change in performance, indicating a need for service.
- Replacement parts: When replacement parts are required, be sure the service technician has used original replacement parts or authorized replacement parts which have the same characteristics as the original part. Unauthorized substitutions may result in degraded performance and reliability, fire, electric shock or other hazards. Unauthorized substitutions may void warranty.
- Safety check: Upon completion of any service or repairs to this projector, ask the service technician to perform safety checks to determine that the product is in proper operating condition.

2. PREPARING THE PROJECTOR

Overview

- Projector accessories
- Terminology overview
- Installation of the batteries into the remote control
- Using the remote control
- Projector configurations
- Location of ceiling mounting holes
- Screen setup
- Screen size and projection distance
- Correcting skewed or distorted image
- About fine streaks on the screen

2.1 Projector accessories

Delivered accessories

- One power cord
- One remote control
- Two R03 batteries (size AAA)
- Lens cap attached to the projector
- CD-ROM
- Safety manual
- Quick start guide

The delivered power cord has to be used exclusively for this product. Never use them for other products.

2.2 Terminology overview

Remote control

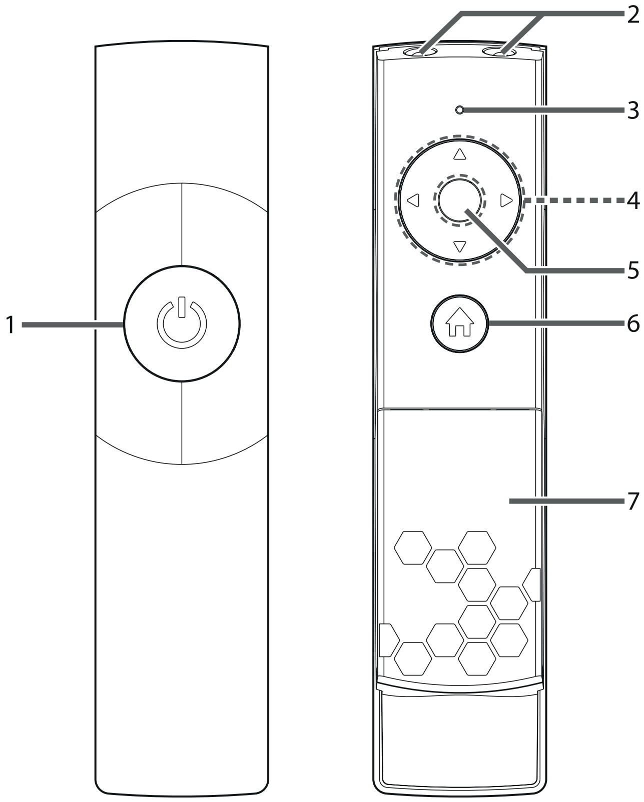


Image 2-1

1 ON/OFF / POWER key (ON/STANDBY)

The status is changed between ON and STANDBY.

2 Transmission windows

3 Indicators

4 ▲, ►, ▼, ◄ keys

5 OK/ENTER key

6 HOME/MENU key

7 Battery compartment

Top and side projector

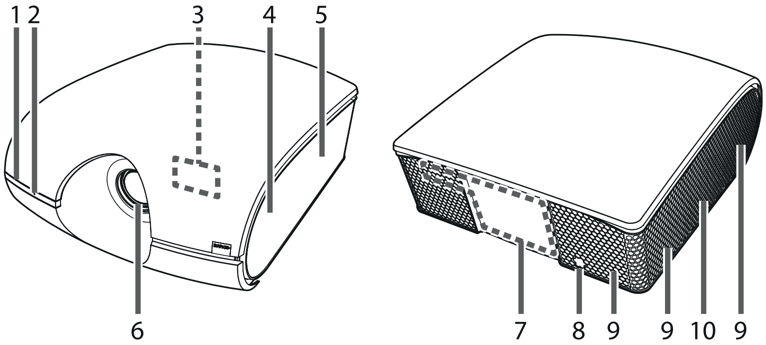


Image 2-2

1 Remote control sensor (front)

2 STATUS Led

3 Indicators (inside of the top cover)

4 Intake vent/Filter cover (inside of the side cover)

5 Intake vent

6 Lens

7 Terminal panel (inside of the rear cover)

8 Remote control sensor (rear)

9 Exhaust vent

10 Lamp cover (inside of the slide cover)

Bottom side projector

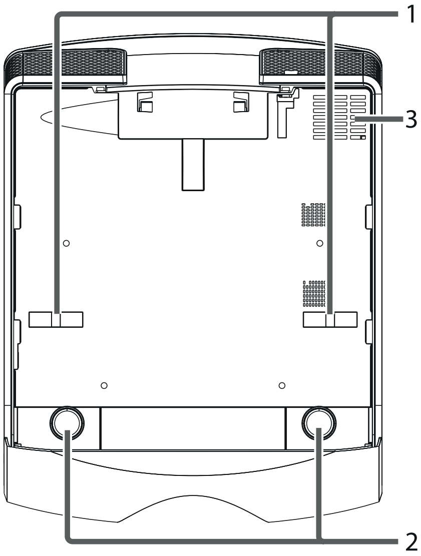


Image 2-3

1 Lock bar (SECURITY ANCHOR)

Attach a chain, etc. to this lock bar to anchor the projector.

2 Adjustment feet

3 Exhaust vent

Terminal panel projector

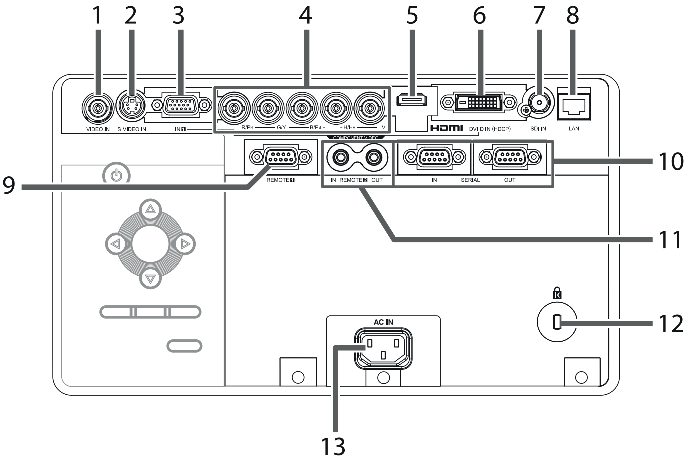

1
2
3
4
5
6
7
8
9
10
11
12
13
VIDEO IN
S-VIDEO IN
IN 1
R/PR
G/Y
B/PB
H/HV
V
HDMI
DVI-D IN (HDCP)
SDI IN
LAN
COMPONENT VIDEO
REMOTE 1
IN - REMOTE 2 - OUT
IN
SERIAL
OUT
AC IN

Image 2-4

1 VIDEO IN terminal (BNC)

2 S-VIDEO IN terminal

3 COMPUTER/COMPONENT VIDEO IN-1 terminal (mini D-SUB 15-pin)

4 COMPUTER/COMPONENT VIDEO IN-2 terminals (R/PR, G/Y, B/PB, H/HV, V) (BNC)

5 HDMI IN terminal (HDMI 19-pin)

6 COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) terminal (DVI-D 24-pin)

7 SDI IN terminal (for PHWU-81B only)

8 LAN terminal

9 REMOTE1 IN terminal (D-SUB 9-pin female)

10 SERIAL IN and OUT terminals (D-SUB 9-pin male)

11 REMOTE 2 IN and OUT terminals

Do not use these terminals.

12 Kensington Security Lock Standard connector

13 Power jack

2.3 Installation of the batteries into the remote control

Read carefully the battery safety instructions, see "Important safety instructions", page 6

Necessary parts

Two size-AAA batteries (R03).

How to insert

1. Slide and remove the rear lid of the remote control.

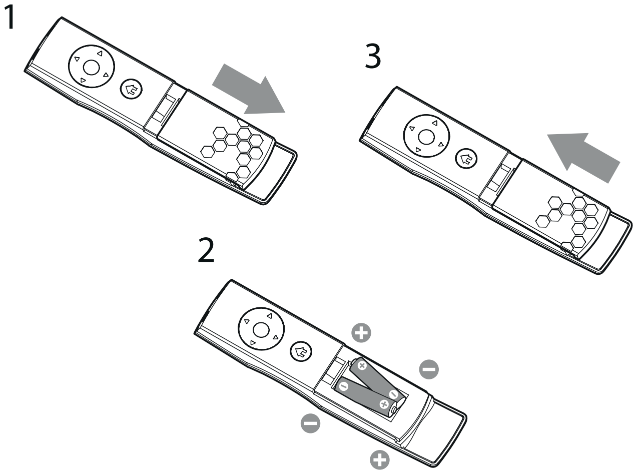


Image 2-5
Batteries insertion

2. Check the polarity (+), (-) of the batteries, and set them correctly, inserting their (-) side first.
   Note: *If the battery is inserted from the (+) side first, inserting the (-) side is difficult because the coil spring end hits on the battery side. If the battery is forced to insert in this way, the outer label of the battery may get ripped and it may cause a short-circuit and heating.*
3. Attach the rear lid.

Replace the 2 batteries with new ones when the remote control is slow to operate.

Removing the batteries from the remote control

Slide and remove the back lid of the remote control and take out the batteries.

2.4 Using the remote control

Operational range

Direct pointing

Operate the remote control within a distance of 15 m (49.2 feet) from the projector, pointing the light beam at the remote control photo-sensor (front or rear) of the projector.

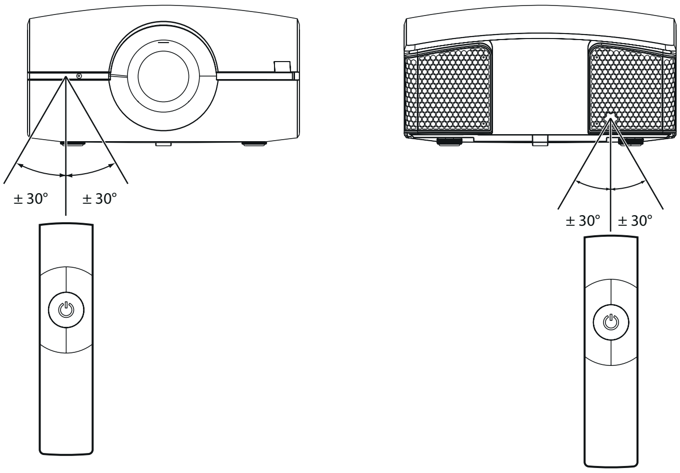


Image 2-6
Front and back control

- Keep the remote control sensor out of direct sunlight or fluorescent lamp light.
- Keep the remote control sensor at least 2 m (6 feet) away from fluorescent lamps. Otherwise, the remote control may malfunction.
- If there is an inverter-operated fluorescent lamp near the remote control, the remote control operation may become unstable.
- When you use the remote control too close to the remote control sensor, the remote control may not work correctly.

Indirect pointing

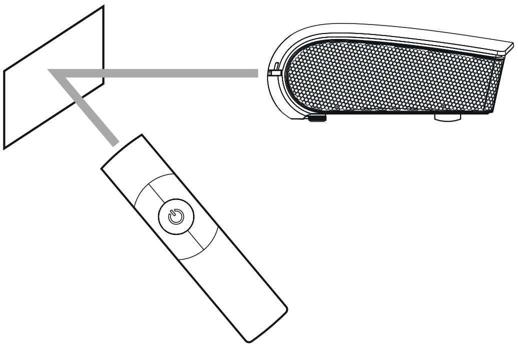


Image 2-7

You can control the projector by the remote control signals reflected on the screen. However, the remote control distance may be restricted by the light reflection loss due to the screen characteristics.

Reception angle, vertical direction

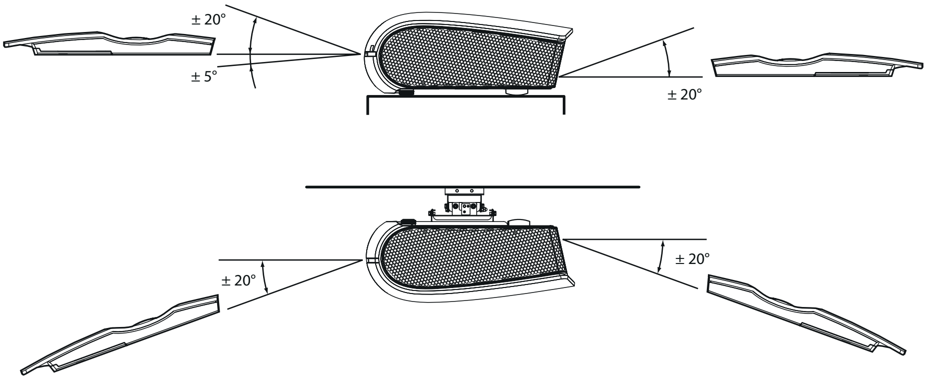


Image 2-8

2.5 Projector configurations

Front projection

The projector is installed, either in a table mount or ceiling mount configuration, at the same side of the screen as the audience.

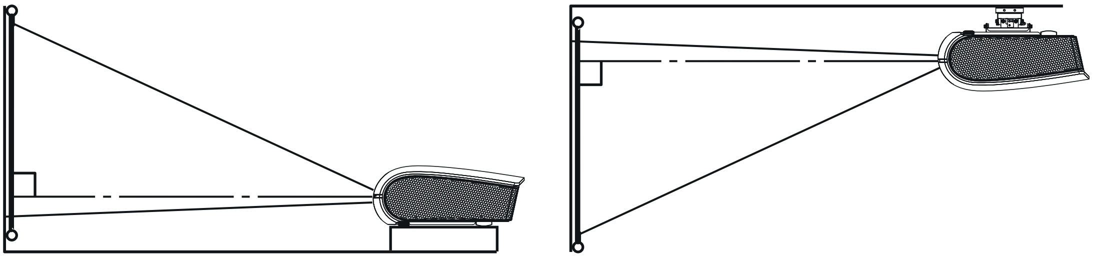


Image 2-9

For ceiling mounting, you need the ceiling mount kit designed for this projector. Ask a specialist for installation. For details, consult your dealer.

Take the following things in mind for ceiling mount installations:

- The warranty on this projector does not cover any damage caused by use of any non-recommended ceiling mount kit or installation of the ceiling mount kit in an improper location.
- When using the projector mounted on the ceiling, set *IMAGE REVERSE* in the *INSTALLATION 1* menu to *MIRROR INVERT*.
- When the projector is mounted on the ceiling, images may appear darker than those projected in the case of tabletop mounting. This isn’t a product malfunction.
- Ask your installation specialist to provide a breaker. When you do not use the projector, be sure to shut down the main power by the breaker.
- Do not install the projector where the exhaust vents are exposed to air emitted by an air conditioning. Such installation may cause a breakdown.
- Do not install the projector near a fire alarm because it emits hot air from its exhaust vents.
- Installation must be done by a qualified professional.
- When the projector is installed on the ceiling using the ceiling mount kit, it is recommended to hold the mount kit and the projector using metal bars or wires in addition to the mount kit fixing screws to prevent the projector from falling due to an earthquake or other cause. For that purpose, use metal bars, wires, or screws that bear a load of at least 260 kgf. When using metal wires, secure one end to the adjustment foot of the projector and the other end to the mount kit. In this case, make sure that no electrical current is flowing in the mount kit due to current leakage or other cause.

Rear projection

The projector is installed, either in a table mount or ceiling mount configuration, at the other side of the screen opposite the audience.

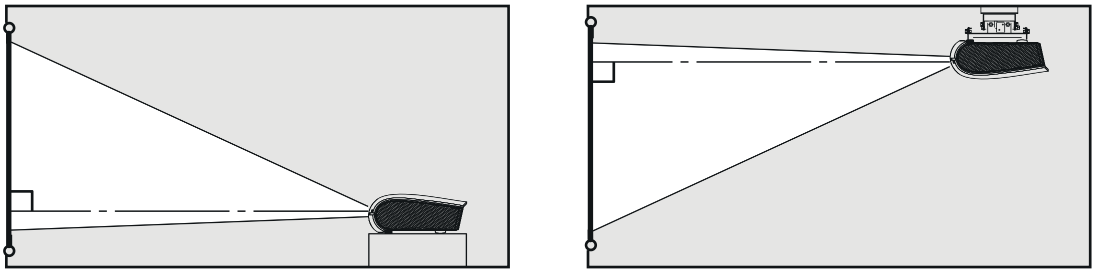


Image 2-10

Ask a specialist for installation. For details, consult your dealer.

Take the following in mind:

- For rear projection, set *IMAGE REVERSE* in the *INSTALLATION 1* menu to *MIRROR*.
- The same points as for a front ceiling should be kept in mind during the installation.

2.6 Location of ceiling mounting holes

Location

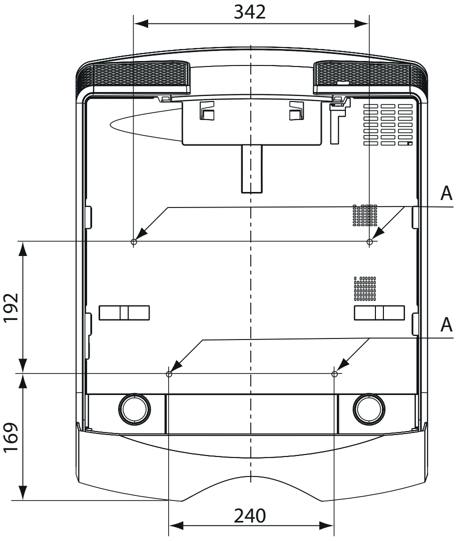


Image 2-11

A : 4 mounting holes for ceiling mount plate. (M4, depth 10 mm)

2.7 Screen setup

Environment check

Before setting up the projector, check the operating environment. If the environmental requirements are not satisfied, the projector may break down or fail.

The allowable operating temperature is +41°F (+5°C) to +104°F (+40°C).

Setting up the screen

Install the screen perpendicularly to the projector. If the screen can not be installed in such a way, adjust the projection angle of the projector.

- Install the screen and projector so that the projector's lens is placed at the same height and horizontal position of the screen center.
- Do not install the screen where it is exposed to direct sunlight or lighting. Light directly reflecting on the screen makes the projected images whitish and hard to view.

2.8 Screen size and projection distance

Before installation

Refer to the table to determine the screen size and projection distance.

- For the aspect ratio setting
- The figures in the tables are approximate and may be slightly different from the actual measurements.
- The lens shift height and width show distances from the factory default position.
- "L" shows the distance between the screen and the lens. • For the projection distance of the option lenses, see the tables in appendix.

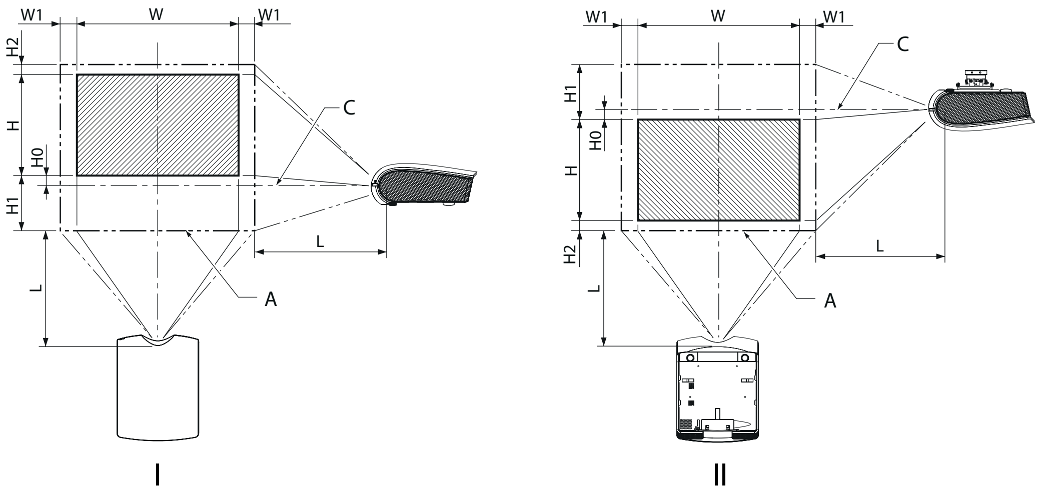


Image 2-12
I Fornt projection
II Front projection, ceiling mounted
A Maximum projection area
C Center of the lens

For PHWU-81B, when the aspect ratio is “FULL” (Display at 1920 x 1200 pixels)

Size of projector image (16:10)						**Projector distance (L)**				**Lens shift height**						**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Standard (H0)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	55	1.4	76	1.9	0	0	10	26	4	10	3	8
60	152	51	129	32	81	83	2.1	115	2.9	0	0	15	39	6	15	5	12
80	203	68	172	42	108	112	2.8	154	3.9	0	0	21	52	8	20	7	17
100	254	85	215	53	135	141	3.6	193	4.9	0	0	26	66	10	25	8	21
150	381	127	323	79	202	213	5.4	291	7.4	0	0	39	98	15	37	12	31
200	508	170	431	106	269	285	7.2	389	9.9	0	0	52	131	20	50	16	42
250	635	212	538	132	337	356	9.1	-	-	0	0	65	164	24	62	20	52
300	732	254	646	159	404	428	10.9	-	-	0	0	77	197	29	75	25	62

For PHWU-81B, when the aspect ratio is “16:9” (Display at 1920 x 1080 pixels)

Size of projector image (16:9)						**Projector distance (L)**				**Lens shift height**						**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Standard (H0)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm
40	102	35	89	20	50	56	1.4	78	2.0	1	3	11	27	4	10	3	9
60	152	52	133	29	75	85	2.2	118	3.0	2	4	16	40	6	15	5	13
80	203	70	177	39	100	115	2.9	158	4.0	2	6	21	54	8	20	7	17
100	254	87	221	49	125	145	3.7	198	5.0	3	7	27	67	10	26	8	21
150	381	131	332	74	187	219	5.6	299	7.6	4	11	40	101	15	38	13	32
200	508	174	443	98	249	293	7.4	399	10.1	6	14	53	135	20	51	17	43
250	635	218	553	123	311	366	9.3	-	-	7	18	66	168	25	64	21	53

For PHWX-81B, when the aspect ratio is “FULL” (Display at 1280 x 800 pixels)

Size of projector image (16:10)						Projector distance (L)				Lens shift height				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shortstr (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	58	1,5	80	2,0	10	25	5	12	3	9
60	152	51	129	32	81	88	2.2	121	3.1	15	37	7	17	5	13
80	203	68	172	42	108	118	3.0	162	4.1	19	49	9	23	7	17
100	254	85	215	53	135	148	3.8	203	5.2	24	62	11	29	9	22
150	381	127	323	79	202	224	5.7	306	7.8	36	92	17	43	13	33
200	508	170	431	106	269	299	7.6	408	10.4	49	123	23	58	17	44
250	635	212	538	132	337	375	9.5	-	-	61	154	28	72	21	55
300	762	254	646	159	404	450	11.4	-	-	73	185	34	86	26	65

For PHWX-81B, when the aspect ratio is “NORMAL” and 4:3 signal is displayed (Display at 1066 x 800 pixels)

Size of projector image (4:3)						Projector distance (L)				Lens shift height				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shortest (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance WA	
inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	65	1.7	90	2.3	11	29	5	12	4	10
60	152	48	122	36	91	100	2.5	137	3.5	17	43	7	18	6	15
80	203	64	163	48	122	134	3.4	183	4.7	23	57	10	25	8	20
100	254	80	203	60	152	168	4.3	230	5.8	28	72	12	31	10	25
150	381	120	305	90	229	254	6.4	346	8.8	42	108	18	46	15	37
200	508	160	406	120	305	339	8.6	-	-	57	144	24	61	19	49
250	635	200	508	150	381	425	10.8	-	-	71	179	30	77	24	62

For PHXG-91B

Screen size						Projector distance (L)				Lens shift height				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shortest (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inch	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	54	1.4	74	1.9	12	30	2	6	3	8
60	152	48	122	36	91	82	2.1	112	2.8	18	46	3	9	5	12
80	203	64	163	48	122	110	2.8	150	3.8	24	61	4	11	6	16
100	254	80	203	60	152	138	3.5	189	4.8	30	76	6	14	8	20
150	381	120	305	90	229	208	5.3	284	7.2	45	114	8	21	12	30
200	508	160	406	120	305	279	7.1	380	9.7	60	152	11	28	16	41
250	635	200	508	150	381	349	8.9	-	-	75	191	14	36	20	51
300	762	240	610	180	457	419	10.6	-	-	90	229	17	43	24	61

2.9 Correcting skewed or distorted image

Problem

For the best projection, project images on a flat screen installed at 90 degrees to the floor. If necessary, tilt the projector using the two adjustment feet on the bottom of the projector.

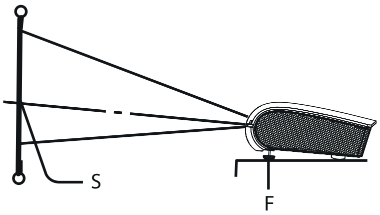


Image 2-13
S Screen
F Adjustable feet

How to adjust

1. Tilt up the projector to the appropriate angle.
2. Rotate the adjustment feet for fine adjustment.

Do not transport the projector with its adjustment feet extended. Otherwise the adjustment feet may be damaged.

2.10 About fine streaks on the screen

About fine streaks

Fine streaks seen on the projected image are due to interference with the screen surface and is not a malfunction. Replace the screen or displace the focus a little.

3. CONNECTIONS

Preparations

To get access to the connections, the covers of the projector must be removed.

CAUTION: Only authorized service personnel are allowed to remove the covers.

3.1 Removing the covers

WARNING: Make sure that the power of the projector is turned off.

Removing the side cover

1. Loosen two screws (a) on the rear and two screws (b) on the side that are securing the side cover (c) using a Phillips screwdriver.

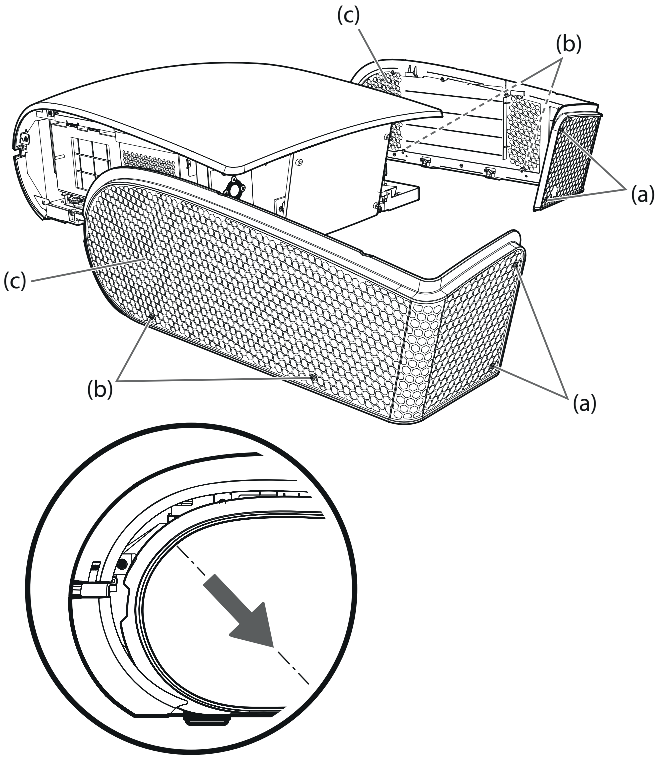


Image 3-1
Side cover removal

2. Slide and remove the side cover towards the rear.

Removing the rear cover

1. Loosen the four screws (d) that are securing the rear cover (e) using a Phillips screwdriver.

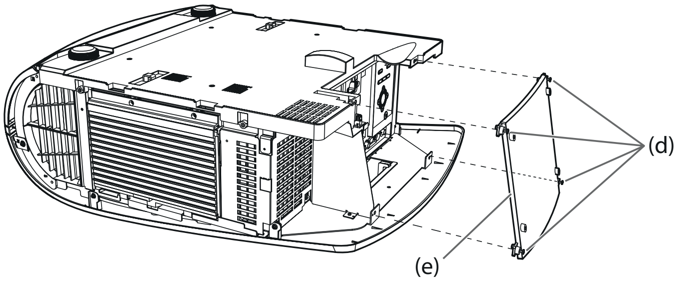


Image 3-2
Rear cover removal

3.2 Power connection

WARNING: In order to ensure the safety in case of trouble with the projector, use an electrical outlet having an earth leakage breaker to supply the power to the projector. If you do not have such outlet, ask your dealer to install it.

About the power cord

- The power cords for use in the U.S., Europe or China are included with this projector. Use the appropriate one for your country.
- This projector uses the power plug of 3-pin grounding type. Do not take away the grounding pin from the power plug. If the power plug doesn't fit your wall outlet, ask an electrician to change the wall outlet.
- Use 100-240 V AC 50/60 Hz to prevent fire or electric shock.
- Do not place any objects on the power cord or do not place the projector near heat sources to prevent damage to the power cord. If the power cord should be damaged, contact your dealer for replacement because it may cause fire or electric shock.
- Do not modify or alter the power cord. If the power cord is modified or altered, it may cause fire or electric shock.
- The attached power cord is to be used exclusively for this product. Never use it for other products.
- The socket-outlet shall be installed nearby the equipment and shall be easily accessible.
- Use the attached specified power supply cord. If you use another power supply cord, it may cause interference with radio and television reception.

How to connect

1. Plug the attached power cord into the power cord inlet of this projector (1).

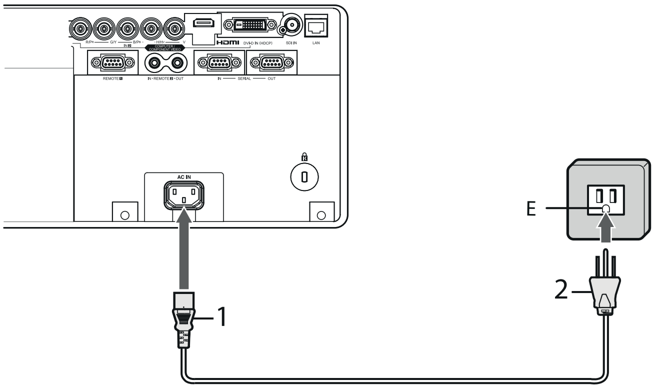


Image 3-3
Power cord connection

E	Earthing (grounding) terminal

2. Plug the other end of the power cord into a power outlet (2)

Take care for the following points

- Plug in the power cord firmly. When unplugging, hold and pull the power plug, not the power cord.
- Do not plug in or out the power cord with your hand wet. It may cause electric shock.
- When you move the projector, turn off the power, unplug the power cord from the wall outlet, and then remove the connected cords. Otherwise, the power cord may be damaged, resulting in fire or electric shock.
- If dust or metallic substance is on or around the pins of the power plug, unplug the power cord and clean it using a dry cloth. If you continue to use the projector without cleaning, it may result in fire or electric shock. Clean the power plug periodically at least once a year.
- Be sure to unplug the power cord from the wall outlet if the projector will not be used for a long period of time. Otherwise, it may cause fire.

3.3 Connecting the projector to a computer

Preparations

Make sure that the power of the projector and that of the computer are turned off.

When connecting the projector to a desktop computer, disconnect the computer cable that is connected to the monitor.

Analog connection to VIDEO IN-1

1. Connect one end of a commercially available computer cable to the COMPUTER/COMPONENT/VIDEO IN-1 terminal of the projector.

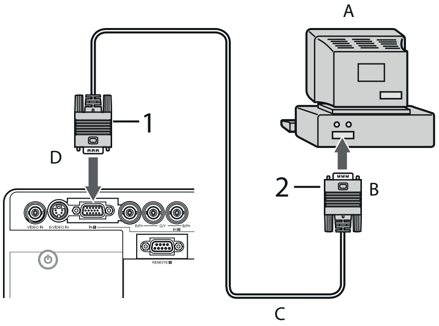


Image 3-4
Computer connection to Video1

A	Computer
B	Connector to computer
C	Computer cable (option)
D	Connector to Video1

2. Connect the other end of the computer cable to the monitor port of the computer.

Analog connection to VIDEO IN-2

1. Connect one end of a commercially available BNC cable to the COMPUTER/COMPONENT VIDEO IN-2 terminals of the projector.

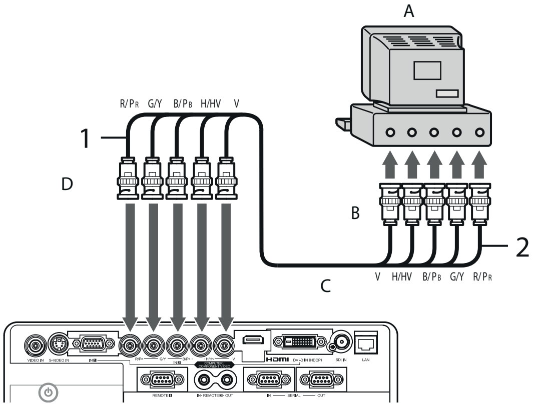


Image 3-5
Computer connection to Video2

A	Computer
B	Connector to computer

C	Computer cable (option)
D	Connector to Video1

2. Connect the other end of the BNC cable to the 5 BNC terminals of the monitor port of the computer.

Digital connection to DVI-D IN

1. Connect one end of a commercially available DVI cable to the COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) terminal of the projector.

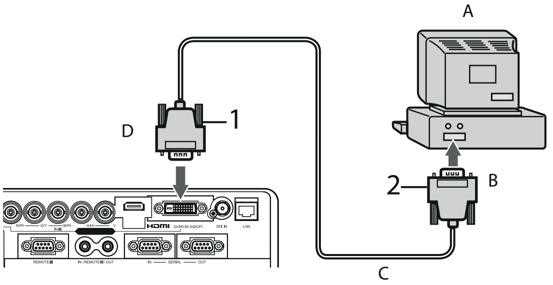


Image 3-6
Computer connection to DVI-D

A	Computer
B	Connector to computer
C	Computer cable (option)
D	Connector to Video1

2. Connect the other end of the DVI cable to the DVI terminal of the computer
3. Turn on the power of the projector before starting the computer.

Take attention for:

- Additional devices, such as a conversion connector and an analog RGB output adapter, are required depending on the type of the computer to be connected.
- Use of a long cable may decrease the quality of projected images.
- Images may not be projected correctly, depending on the type of the connected computer.
- When DVI-D signal is input, some signal setting menus are unavailable.
- Also read the instruction manual of the equipment to be connected.
- Contact your dealer for details of connection.

About DDC

The COMPUTER/COMPONENT VIDEO IN-1 terminal of this projector complies with the DDC1/2B standard and the COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) terminal complies with the DDC2B standard. When a computer supporting this standard is connected to this terminal, the computer will automatically load the information from this projector and prepare for output of appropriate images.

After connecting a computer supporting this standard to this terminal, plug the power cord of the projector in the wall outlet first, and then boot up the computer.

When connecting to a notebook computer:

When the projector is connected to a notebook computer, images may not be projected in some cases. In such cases, set the computer so that it can output signals externally. The setting procedure varies depending on the type of the computer. See the instruction manual of your computer.

Setting of the resolution

If the resolution of the computer doesn't match with that of the projector, projected images may be obscured. Ensure that their resolutions are the same (see pages 81 to 83). For the method to change the output resolution of the computer, contact the manufacturer of the computer.

3.4 Connecting the projector to video equipment

Preparations

Make sure that the power of the projector and that of the computer are turned off.

Connecting to a video player, etc. to the BNC terminal

1. Connect one end of a commercially available BNC cable to the VIDEO IN terminal of the projector.

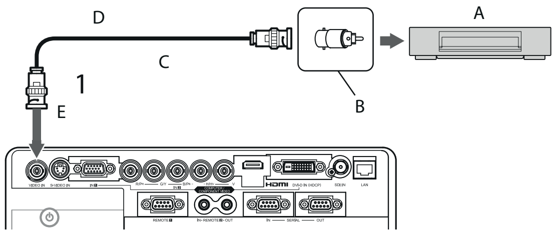


Image 3-7

1	BNC plug
A	Video player or the like
B	BNC-RXA adapter (optional)
C	To video output terminal
D	B?C cable (optional)
E	To VIDEO IN terminal (BNC)

2. Connect the other end of the BNC cable to the video output terminal of the video equipment.

Connecting to video equipment, equipped with S-Video

1. Connect one end of a commercially available S-video cable to the S-VIDEO IN terminal of the projector.

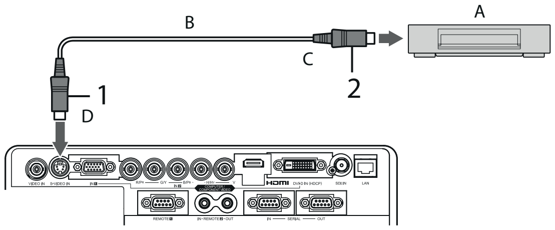


Image 3-8

1, 2	S Video connector
A	Video player or the like
B	S-video cable
C	To S-video output terminal
D	To S-VIDEO IN terminal

2. Connect the other end of the S-video cable to the S-video output terminal of the video equipment.

Projector + DVD player or HDTV decoder

Some DVD players have an output connector for 3-line fitting (Y, CB, CR). When connecting such DVD player with this projector, use the COMPUTER/COMPONENT VIDEO IN-2 terminals.

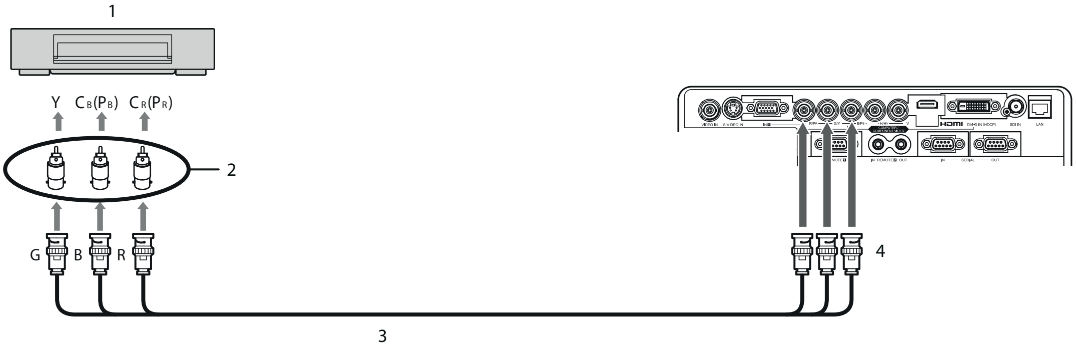


Image 3-9

1	DVD player or HDTV decoder
2	BNC-RCA connector (optional)
3	BNC cable (option)
4	Computer/Components VIDEO IN-2

- The terminal’s names Y, PB, and PR are given as examples of when a HDTV decoder is connected.
- The terminal’s names vary depending on the connected devices.
- Use BNC cables for connection.
- Image may not be projected correctly with some DVD players.
- If colors aren’t displayed correctly when the projector is connected to a high-definition video device having R, G, and B output terminals, set *COMPUTER INPUT* to *RGB* in the *SIGNAL* menu.

Connecting to video equipment having a HDMI terminal or DVI-D terminal

You can project high-quality images by connecting the COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) terminal of this projector to video equipment having a HDMI output terminal or DVI-D terminal. In addition, this projector supports HDCP and is able to receive encrypted digital video data that are output from DVD players.

- HDCP (High-bandwidth Digital Content Protection), developed by Intel Corporation, is a method to encrypt digital video data for the purpose of copy protection.
- HDMI (High-Definition Multimedia Interface) is fully backward compatible with computers, displays and consumer electronics devices incorporating the DVI standards.
- This projector can be linked with video devices equipped with HDMI output terminal or DVI-D output terminal. However, with some of them, this projector may not display any image or not operate correctly.
- If this projector doesn't display any image or not operate correctly, see the operation manual of the video device for its connection.
- Use of a long cable may decrease the quality of projected images.

Connection (for video equipment having an HDMI terminal)

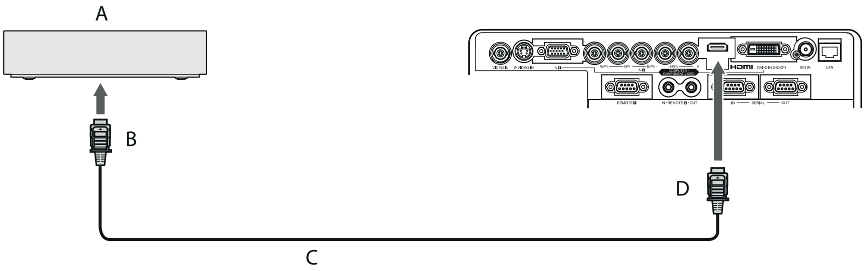


Image 3-10
A Equipment having a HDMI terminal
B HDMI cable (option)
C HDMI IN

- Use a commercially available HDMI (with HDMI logo) cable.
- Some cables may not be connected correctly depending on the size and shape of their connectors.
- When HDMI is selected as the input source, settings of *FINE SYNC.*, *TRACKING*, *HOLD*, etc. are unavailable.

Connection (for video equipment having a DVI-D terminal)

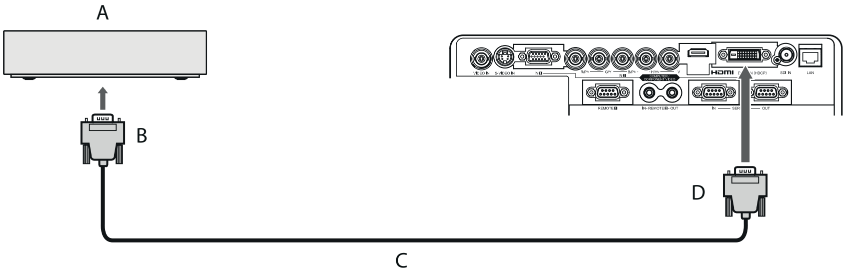


Image 3-11
A Equipment having a DVI-D terminal
B To DVI-D terminal
C DVI cable (option)
D Computer/Component VIDEO DVI-D IN (HDCP)

- For connection to the DVI-D terminal, use a commercially available DVI cable.
- Some cables may not be connected correctly depending on the size and shape of their connectors.
- When DVI is selected as the input source, settings of *FINE SYNC., TRACKING*, *HOLD*, etc. are unavailable.

Attention when connecting a digital device

When you connect this projector and a digital device (such as a DVD player) via the HDMI IN or COMPUTER/ COMPONENT VIDEO DVI-D IN (HDCP) terminal, black color may appear dark and deep, depending on the type of the connected device.

- This depends on the black level setting of the connected device. There are 2 kinds of methods to digitally transfer image data, in which different black level settings are employed respectively. Therefore, the specifications of the signals output from DVD players differ, depending on the type of the digital data transfer method they use.
- Some DVD players are provided with a function to switch the methods to output digital signals. When your DVD player is provided with such function, set it as follows.
  EXPAND or ENHANCED → NORMAL
  See the users guide of your digital device.
  When your digital device does not have such function, set INPUT LEVEL to ENHANCED in the ADVANCED menu of the IMAGE menu of the ADVANCED menu of this projector, or adjust the black color by viewing the image.

3.5 Installing the covers

Installing the rear cover

1. Insert the rear cover (e) into the projector and tighten four screws (d) on the rear cover using a Phillips screwdriver.

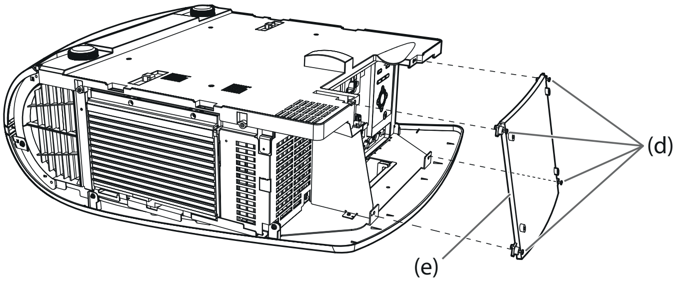


Image 3-12
Rear cover mounting

Installing the side cover

1. Insert the side cover into the projector and tighten two screws (a) on the rear and two screws (b) on the side of the side cover (c) using a Phillips screwdriver

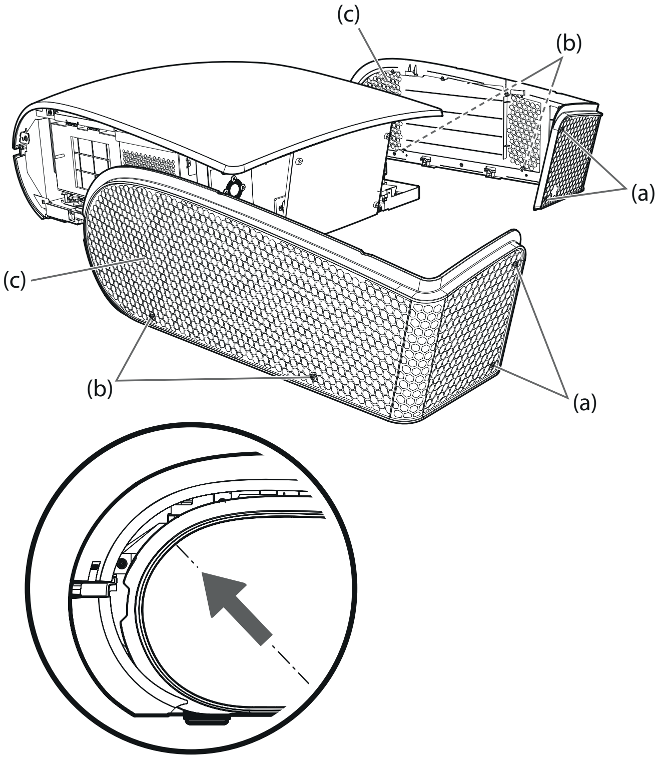


Image 3-13
Side cove mounting

4. GETTING STARTED

4.1 Basic Remote control, indications

Overview

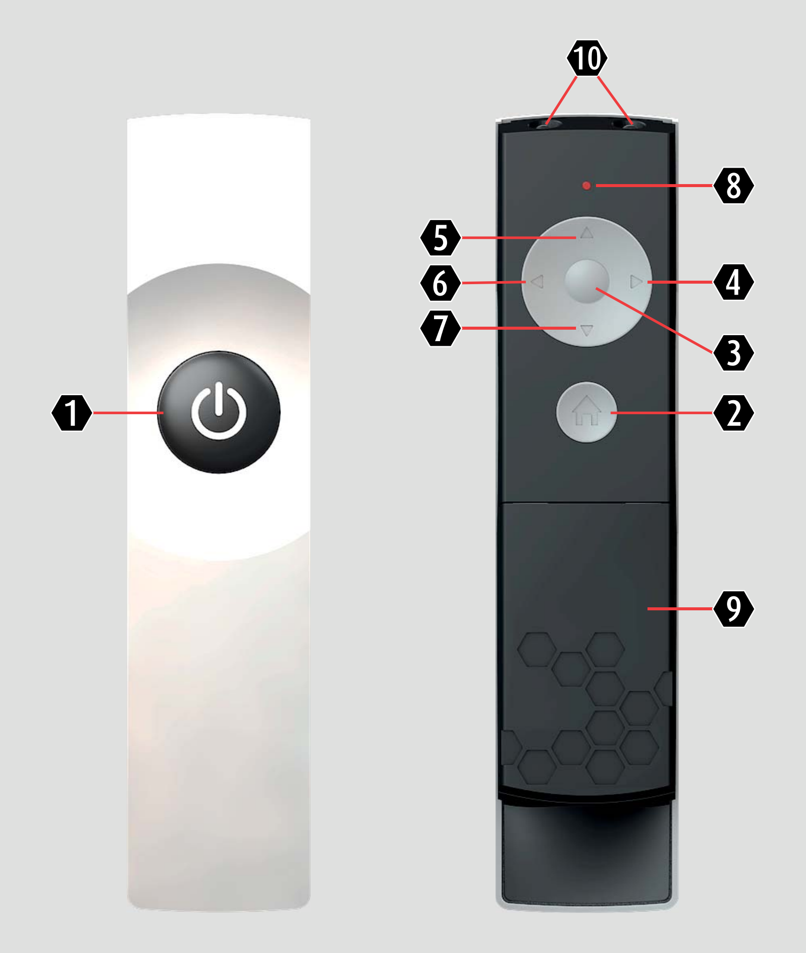


Image 4-1

1	ON/OFF
2	HOME
3	OK
4	ARROW RIGHT (►)
5	ARROW UP (▲)
6	ARROW LEFT (◄)
7	ARROW DOWN (▼)
8	LED INDICATION
9	BATTERY COMPARTMENT
10	IR LEDs

Basic actions

Result	RCU Lite: action	
start the projector	press **on/off**	❶
turn off the projector	press **on/off**	❶ > ❶
show main menu on screen	press **home**	❷
move through menu	press arrow keys	❺ ❻ ❹ ❼
select button	press **ok**	❸
select and return to previous menu	press **ok**	❸
return to previous menu without selecting	press **home**	❷
clear OSD Lite of screen	press **home**	❷

4.2 OSD Lite navigation results

Overview

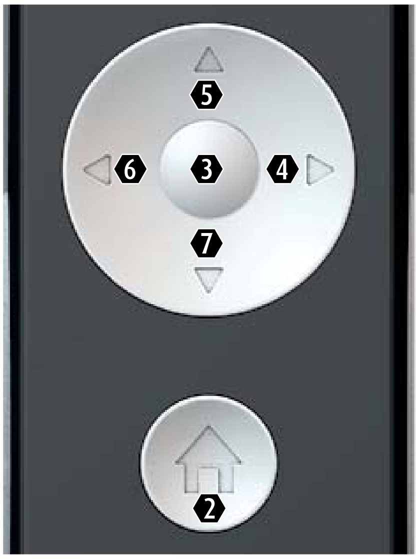


Image 4-2

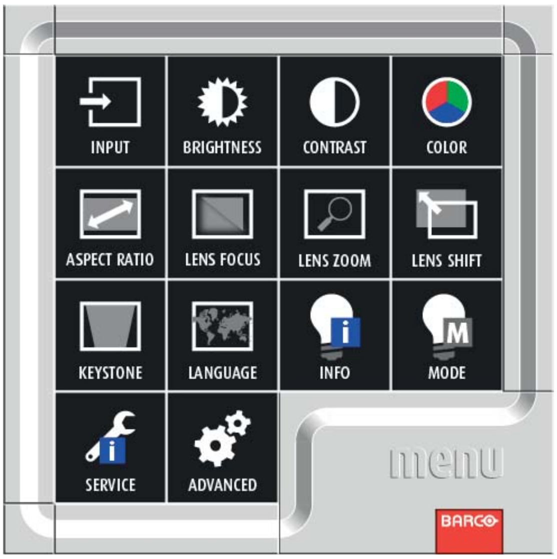
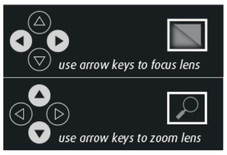
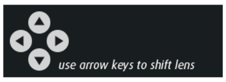
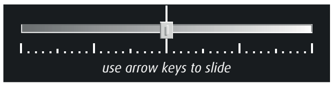
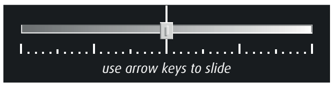
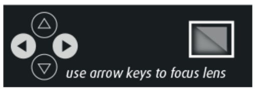
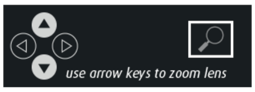
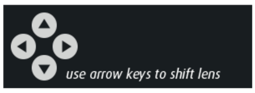
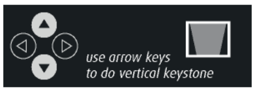
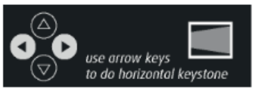

INPUT
BRIGHTNESS
CONTRAST
COLOR
ASPECT RATIO
LENS FOCUS
LENS ZOOM
LENS SHIFT
KEYSTONE
LANGUAGE
INFO
MODE
SERVICE
ADVANCED
menu
BARCO

Image 4-3

Basic OSD Lite navigation result	RCU Lite action		OSD Lite on screen
show main menu of OSD Lite on screen	press home	❷	main menu appears in bottom right corner
to move through the OSD Lite	use arrow keys	❺ ❻ ❹ ❼	button will turn red when the function is available
go to desired function	press ok	❸	the menu of the desired function will appear
leave the menu or clear the screen	press home	❷	the main menu will be displayed or when you are in the main menu the screen will be cleared.

Hotkey / Short Cut	**RCU Lite → OSD Lite**
Remote Command	
result	**action → on screen**
to quick adjust a burry screen	3  use arrow keys to focus lens use arrow keys to zoom lens 5 6 4 7 > 3  use arrow keys to shift lens 5 6 4 7 > 3
mute picture and sound on the projector	5 > 5
unmute picture and sound on the projector	press any key

main menu is on screen, go to button required		**RCU Lite → OSD Lite**
result		**Action → on screen**
select input manually	5 6 4 7 INPUT 3 >	5 6 4 7 go to input desired (default setting = HDMI) > 3
make the image brighter or darker	5 6 4 7 BRIGHTNESS 3	 use arrow keys to slide 6 4 default setting = middle > 3
adapt the contrast between light/dark areas	5 6 4 7 CONTRAST 3	 use arrow keys to slide 6 4 default setting = middle > 3
select color preset most fitted for your image	5 6 4 7 COLOR 3	AUTO SELECT optimized setting for input signal (= default setting) > 3 PRESENTATION best condition to view “computer” images VIDEO best option to view movie BRIGHTNESS 100% bright
aspect ratio	5 6 4 7 ASPECT RATIO 3 >	5 6 4 7 go to aspect ratio desired (default setting = NATIVE) > 3
adjust focus of image	5 6 4 7 LENS FOCUS 3	 use arrow keys to focus lens 6 and/or 4 > 3
adjust size of image	5 6 4 7 LENS ZOOM 3	 use arrow keys to zoom lens 5 and/or 7 > 3
adjust position of image	5 6 4 7 LENS SHIFT 3	 use arrow keys to shift lens 5 6 4 7 > 3

	main menu is on screen, go to button required	**RCU Lite → OSD Lite**	
result		**Action → on screen**	
adjust keystone	5 6 4 7 KEYSTONE 3	 use arrow keys to do vertical keystone 5 and/or 7  use arrow keys to do horizontal keystone 6 and/or 4	> 3
select language	5 6 4 7 LANGUAGE 3 >	5 6 4 7 go to lamp mode desired (default setting = NORMAL	> 3
show lamp info	5 6 4 7 INFO 3		> 3
show lamp mode	5 6 4 7 MODE 3 >	6 and/or 4 go to lamp mode desired (default setting = NORMAL	> 3
show projector info	5 6 4 7 SERVICE 3		> 3
enter advanced menu	5 6 4 7 ADVANCED 3 >	contact your service technician to enter the advanced menu default password : ◄ ◄ ► ▼	> 3

4.3 Projecting images

Preparation

Remove the lens cap before starting projecting images.

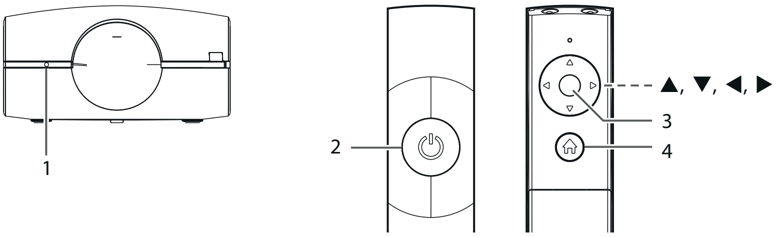


Image 4-4

1	Status LED
2	ON/OFF key
3	OK key
4	HOME key

How to project

1. Confirm the STATUS Led lights up red.

   If the projector was turned off before the lamp was cooled down sufficiently last time, the fan may start rotating and the ON/OFF key may not work after the power cord is plugged. After the fan stops rotating, press the **ON/ OFF** key to turn back on the STATUS Led.

2. Turn on the power of the connected equipment.

3. Press the **ON/OFF** key.

- It may take about 2 minutes for the lamp to light up.
- The lamp fails to light up on rare occasions. In such a case, wait for a few minutes and then try again.
- After the **ON/OFF** key is pressed, the image may flicker before the lamp becomes stable. This is not a product malfunction.
- The lamp operation becomes stable in 2 minutes after the power is turned on and then the lamp mode selected in the menu is activated. During the activation, displayed images may be disturbed.
- The projector starts warming up when the **ON/OFF** key is pressed. During the warm-up process, images may appear dark and no commands are accepted.
- Do not cover the lens with the lens cap while the lamp is on.

4. Press the **HOME** key to display the OSD Lite menu and press the ▲, ►, ▼,or ◄ key to select LENS FOCUS, and press the **OK** key.

   The *LENS FOCUS* menu appears.

5. Adjust with the ◄ or ► key to get a fine picture.
6. Select an input source.
   - Press the **HOME** key to display the OSD Lite menu and press the **OK** key. The *INPUT* menu is displayed. Then press the ▲, ►, ▼,or ◄ key to select the appropriate input source.
   - The projector automatically selects the appropriate signal format. The selected signal format is displayed on the screen.
   - Though it may take some time before an image is displayed on the screen depending on the type of the input signal, such symptom is not a malfunction.
   - For computer images: Images may not be projected in the correct position, depending on the type of the input signal. In such a case, use the *AUTO POSITION* function.
   - When VGA (COMPUTER 1) or 5BNC (COMPUTER 2) is chosen as the source, images supplied from the computer may flicker. Use *FINE SYNC*. in the *SIGNAL* menu to reduce flicker, if it occurs. (Fine adjustment)
   - Some images become easier to view when the setting of aspect ratio is changed.
7. Adjust the position of the projector to keep an appropriate projection distance with which images are projected in their specified sizes.
8. Adjust the position of the projector so that the projector and the screen are perpendicular to each other.

   When the projector cannot be positioned perpendicularly to the screen, adjust the projection angle.

9. Press the **HOME** key to display the OSD Lite menu and press the ▲, ►, ▼,or ◄ key to select *LENS ZOOM*, and press the **OK** key.

   The *LENS ZOOM* menu appears.

10. Adjust with the ▲ or ▼ key to get an approximate size.
11. Press the **OK** key to display the *LENS SHIFT* menu.
12. Press the ▲ or ▼ key to adjust the vertical position and ◄ or ► key to adjust the horizontal position of the displayed image.

    When the image is not displayed within the screen, adjust the projection angle. In addition, perform the keystone adjustment, if necessary.

13. Repeat steps 4, 5 and 9 to 12, if necessary.

Focus, zoom and lens shift adjustment is possible in the normal picture mode only.

4.4 Stop projecting images

How to stop

1. Press the **ON/OFF** key.
   - A confirmation message is displayed.
   - To cancel the procedure, press any key except the ON/OFF key.
2. Press the **ON/OFF** key again.

   The lamp goes out and the projector goes into a standby mode. In this standby mode, the STATUS Led blinks red.

3. Wait about 2 and a half minutes for the STATUS Led to be turned on.
   - During this period of 2 and a half minutes in the standby mode, the intake fan and exhaust fan rotate to cool the lamp.
   - The air outlet fans rotate faster as the temperature around the projector rises.
   - Though the fans make loud sounds during cooling, such symptom is not a malfunction.
4. Unplug the power cord from the outlet.

- The STATUS Led will go out.
- If the power cord should be unplugged accidentally while either the air inlet fan or the air outlet fans are operating or the lamp is on, allow the projector to cool down for 10 minutes with the power off. To light the lamp again, press the ON/OFF key. If the lamp doesn't light up immediately, press the **ON/OFF** key a few minutes later. If it should still fail to light up, replace the lamp.
- Cover the lens with the lens cap to protect it from dust.

Direct Power OFF

You can turn off this projector just by unplugging the power cord without pressing the **ON/OFF** key.

- Don't shut down the projector while the STATUS Led is blinking after the lamp lights up because the lamp's life may be shortened.
- Don't turn the projector back on right after shutting it down because the lamp's life may be shortened. (Wait about 10 minutes before turning the projector back on.)
- Before shutting down the projector, be sure to close the menu screen. If you shut down the projector without closing the menu, the setting data of the menu may not be saved.
- Don't shut down the projector while the filter is rolling.

4.5 Adjusting the position of the projected image

What can be done?

If the projected image is out of the screen after the adjustment, adjust the projector position or the lens position using the lens shift function.

How to adjust

1. Press the **OK** key to display the *LENS FOCUS/ LENS ZOOM* menu.

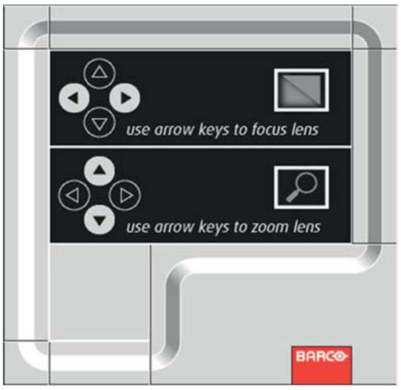


Image 4-5

2. Adjust with the ◄ or ► key to get a fine picture.
3. Adjust with the ▲ or ▼ key to get an approximate size.
4. Press the **OK** key.

   The *LENS SHIFT* menu appears.

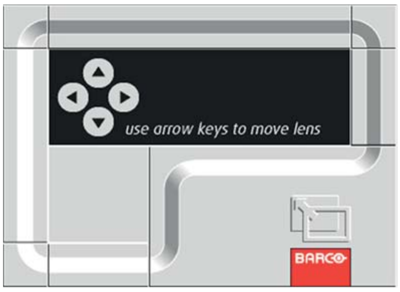


Image 4-6

5. Press the ▲, ◄, ▼ or ► key to move the image position.

- When the ▼ key is pressed, the image moves down.
- When the ▲ key is pressed, the image moves up.
- When the ► key is pressed, the image moves to the right.
- When the ◄ key is pressed, the image moves to the left.

Be careful not to be caught in the opening in the lens while the lens is moving.

While the lens shift is working, the screen may flicker.

4.6 When the projected image is distorted or a trapezoid

When keystone distortion

When the screen and the projector are not placed perpendicularly to each other, projected images become trapezoidal. If you cannot place them perpendicularly to each other, use the KEYSTONE mode adjustment.

How to adjust

1. Press the **HOME** key to display the OSD Lite menu.

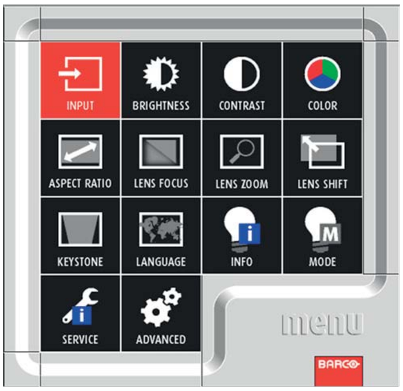

INPUT
BRIGHTNESS
CONTRAST
COLOR
ASPECT RATIO
LENS FOCUS
LENS ZOOM
LENS SHIFT
KEYSTONE
LANGUAGE
INFO
MODE
SERVICE
ADVANCED
menu
BARCO

Image 4-7

2. Select *KEYSTONE* by pressing the ▲, ◄, ▼ or ► key.

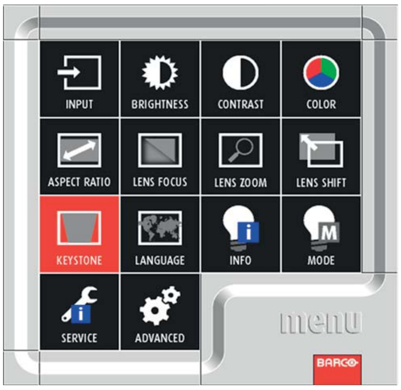

INPUT
BRIGHTNESS
CONTRAST
COLOR
ASPECT RATIO
LENS FOCUS
LENS ZOOM
LENS SHIFT
KEYSTONE
LANGUAGE
INFO
MODE
SERVICE
ADVANCED
menu
BARCO

Image 4-8

3. Press the **OK** key.

   The *KEYSTONE* menu appears.

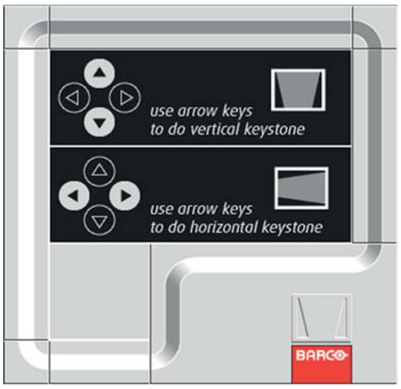


Image 4-9

4. Adjust the keystone by pressing the ▲, ◄, ▼ or ► key.

   In the following cases (for front projection):

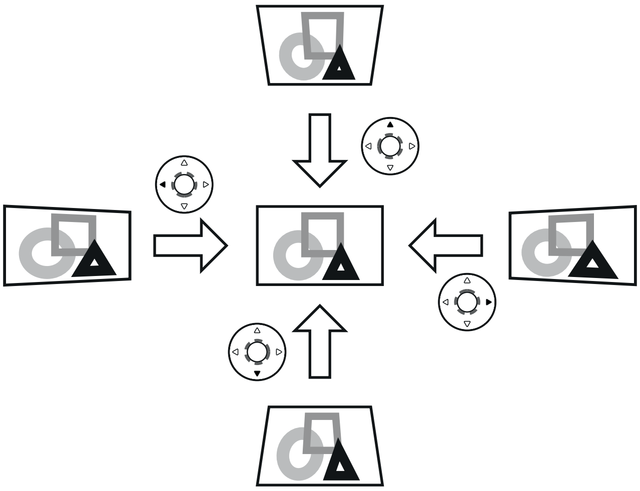


Image 4-10

5. Press the **ON/OFF**, **OK** or **HOME** key to exit the menu.

Important

- For proper KEYSTONE-mode adjustment results, reset the lens to the factory-adjusted position using *LENS SHIFT RESET* in the *INSTALLATION 1* menu in the *ADVANCED* menu before carrying out KEYSTONE-mode adjustment.
- When the KEYSTONE-mode adjustment takes effect, the resolution decreases. In addition, stripes may appear or straight lines may bend in images with complicated patterns. They are not due to product malfunctions.
- When the KEYSTONE-mode adjustment is performed, the displayed image may be distorted.
- Depending on the installation conditions of the projector and the screen, a perfect rectangular image and the proper aspect ratio may not be obtained. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.
- Noise may appear on the screen during the KEYSTONE-mode adjustment because of the type of the video signal being projected and the setting values of the KEYSTONE-mode adjustment. In such cases, set the KEYSTONE-mode adjustment values in the range where the image is displayed without noise.
- When you carry out the KEYSTONE-mode adjustment and the CURVED-mode adjustment in combination, the adjustment range becomes narrower than that in the case where you carry out these adjustments individually. When setting the KEYSTONE-mode adjustment value to 11 or larger, you cannot use the CURVED-mode adjustment.
- When carrying out the KEYSTONE-mode adjustment while the option lens is in use, you may not be able to obtain a perfectly rectangular image or the correct aspect ratio. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.

4.7 Blanking the screen temporarily

About blanking temporarily

The video signal is temporarily muted. The screen turns black. You will hear a mechanical shutter sound inside the projector.

How to set the BLANK mode

1. Press the ▲ key on the remote control twice while the menu is not displayed.

The MUTE screen appears. “MUTE ON - PRESS ANY KEY TO EXIT” is displayed for 3 seconds. Then, the mechanical shutter is closed and the projector goes into the BLANK mode.

2. To cancel the BLANK mode, press any key on the remote control.

4.8 Auto position mode

Act as follow

When the image supplied from the computer is displaced, carry out the following procedure.

1. Project a bright image containing as many texts and characters as possible.
2. When the screen saver has been enabled, disable it.
3. Press the **HOME** key to display the OSD Lite menu and press the **OK** key.

   The *INPUT* menu is displayed.
4. Press the ▲, ◄, ▼ or ► key to select *AUTO POSITION*.

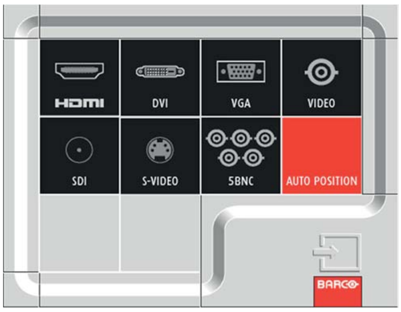


Image 4-11

   The projector automatically makes optimum positional settings for the input signal.
5. If the projected image is still displaced even after carrying out the *AUTO POSITION* several times, refer to the procedure to adjust computer images.
6. When you carry out this procedure with a dark image, the image may be displaced.

5. ADVANCED MENU

5.1 Starting the advanced menus

How to set

1. Press **HOME** key to display the OSD Lite menu.

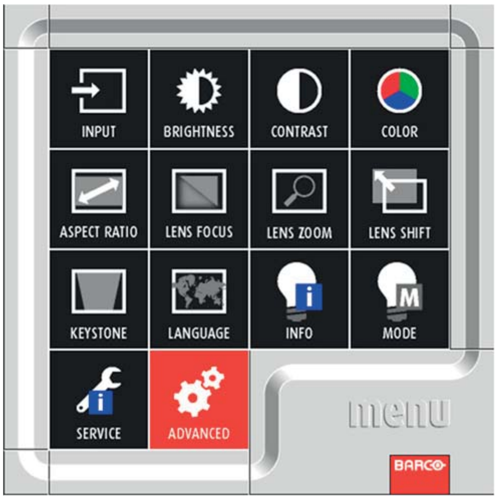
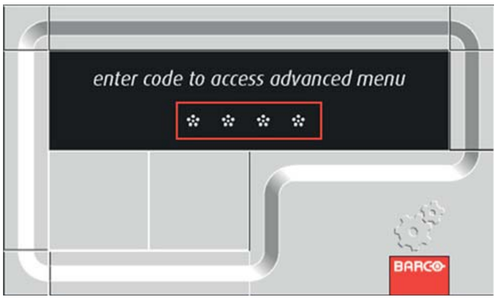

INPUT
BRIGHTNESS
CONTRAST
COLOR
ASPECT RATIO
LENS FOCUS
LENS ZOOM
LENS SHIFT
KEYSTONE
LANGUAGE
INFO
MODE
SERVICE
ADVANCED
menu
BARCO

Image 5-1

2. Use the arrow keys to select *ADVANCED* and press **OK**.

   The enter password menu is displayed.



enter code to access advanced menu

Image 5-2

3. Enter the pass code.

   Default password : ◄ ◄ ► ▼

   The menu selection bar is displayed.

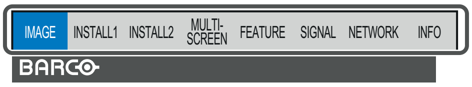


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

Image 5-3

   Selectable menus are displayed (The menu being selected is displayed on a blue background.)

4. Press the ◄ or ► key to select a menu to use.
5. Press the **OK** key (or ▼ key).

The selected menu is displayed.

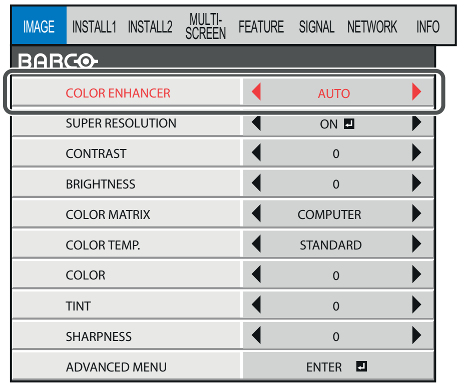


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

COLOR ENHANCER	AUTO
SUPER RESOLUTION	ON ⏎
CONTRAST	0
BRIGHTNESS	0
COLOR MATRIX	COMPUTER
COLOR TEMP.	STANDARD
COLOR	0
TINT	0
SHARPNESS	0
ADVANCED MENU	ENTER ⏎

Image 5-4

The item being selected is displayed in red letters.

6. Press the ▲ or ▼ key to select an item to adjust.
7. Set the selected item by pressing the ◄ or ► key.
8. To cancel the menu, press the **HOME** key several times.

Important

- When an item marked with “⏎ ” is selected, pressing the **ENTER** key makes its value effective or displays another screen for further setting.
- When the **HOME** key doesn’t function, unplug the power cord from the wall outlet. Wait about 10 minutes, plug the power cord in, and try again.
- The menus and screens shown in this manual may be different from those of the actual projector.

5.2 Advanced menus overview

Overview

You can make various settings using the displayed menus.

Following 8 menus are displayed. (These menus show those of PHWU-81B. Some menu items are different depending on the models.)

IMAGE menu

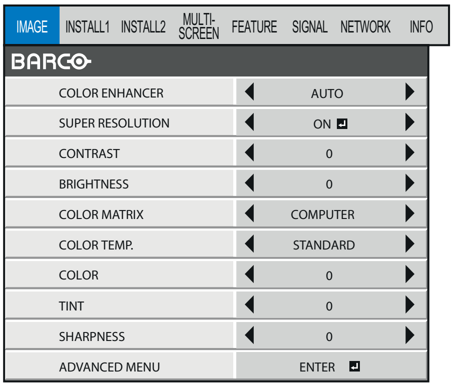


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

COLOR ENHANCER	AUTO
SUPER RESOLUTION	ON ⏎
CONTRAST	0
BRIGHTNESS	0
COLOR MATRIX	COMPUTER
COLOR TEMP.	STANDARD
COLOR	0
TINT	0
SHARPNESS	0
ADVANCED MENU	ENTER ⏎

Image 5-5

INSTALLATION 1 menu

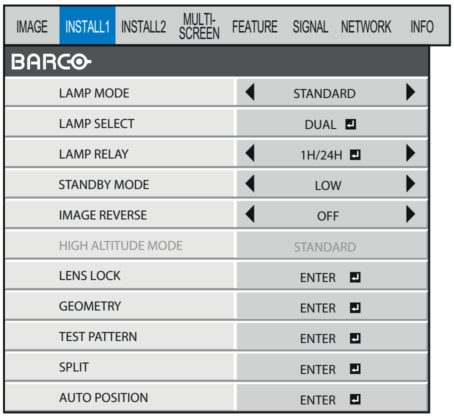


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

LAMP MODE	STANDARD
LAMP SELECT	DUAL ⏎
LAMP RELAY	1H/24H ⏎
STANDBY MODE	LOW
IMAGE REVERSE	OFF
HIGH ALTITUDE MODE	STANDARD
LENS LOCK	ENTER ⏎
GEOMETRY	ENTER ⏎
TEST PATTERN	ENTER ⏎
SPLIT	ENTER ⏎
AUTO POSITION	ENTER ⏎

Image 5-6

INSTALLATION 2 menu

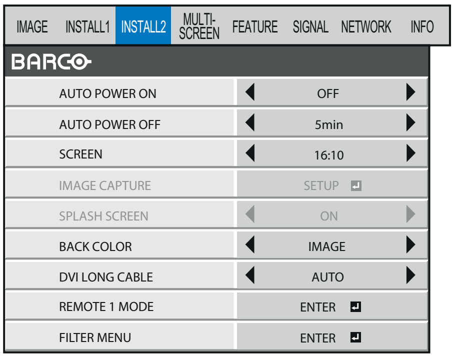


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

AUTO POWER ON	◀ OFF ▶
AUTO POWER OFF	◀ 5min ▶
SCREEN	◀ 16:10 ▶
IMAGE CAPTURE	SETUP ↵
SPLASH SCREEN	◀ ON ▶
BACK COLOR	◀ IMAGE ▶
DVI LONG CABLE	◀ AUTO ▶
REMOTE 1 MODE	ENTER ↵
FILTER MENU	ENTER ↵

Image 5-7

MULTI-SCREEN menu

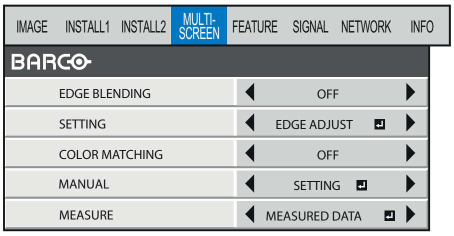


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

EDGE BLENDING	◀ OFF ▶
SETTING	◀ EDGE ADJUST ↵ ▶
COLOR MATCHING	◀ OFF ▶
MANUAL	◀ SETTING ↵ ▶
MEASURE	◀ MEASURED DATA ↵ ▶

Image 5-8

FEATURE menu

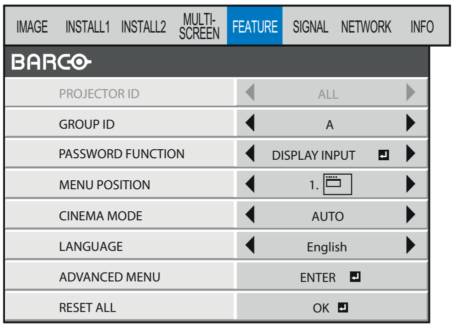


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

PROJECTOR ID	◀ ALL ▶
GROUP ID	◀ A ▶
PASSWORD FUNCTION	◀ DISPLAY INPUT ↵ ▶
MENU POSITION	◀ 1. ▭ ▶
CINEMA MODE	◀ AUTO ▶
LANGUAGE	◀ English ▶
ADVANCED MENU	ENTER ↵
RESET ALL	OK ↵

Image 5-9

SIGNAL menu

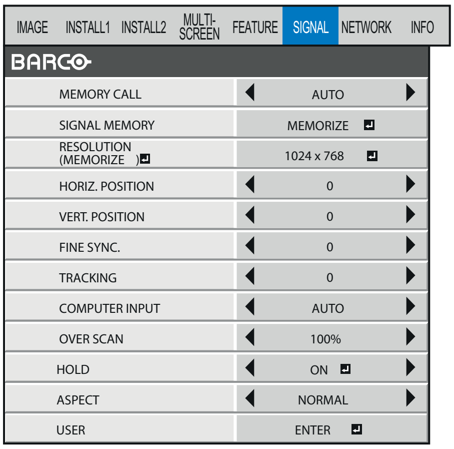


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

MEMORY CALL	◀ AUTO ▶
SIGNAL MEMORY	MEMORIZE ↵
RESOLUTION (MEMORIZE)↵	1024 x 768 ↵
HORIZ. POSITION	◀ 0 ▶
VERT. POSITION	◀ 0 ▶
FINE SYNC.	◀ 0 ▶
TRACKING	◀ 0 ▶
COMPUTER INPUT	◀ AUTO ▶
OVER SCAN	◀ 100% ▶
HOLD	◀ ON ↵ ▶
ASPECT	◀ NORMAL ▶
USER	ENTER ↵

Image 5-10

NETWORK menu

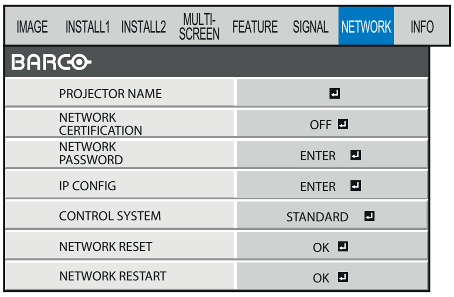


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

PROJECTOR NAME	↵
NETWORK CERTIFICATION	OFF ↵
NETWORK PASSWORD	ENTER ↵
IP CONFIG	ENTER ↵
CONTROL SYSTEM	STANDARD ↵
NETWORK RESET	OK ↵
NETWORK RESTART	OK ↵

Image 5-11

INFORMATION menu

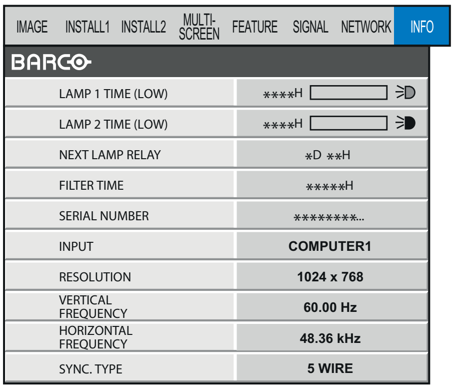


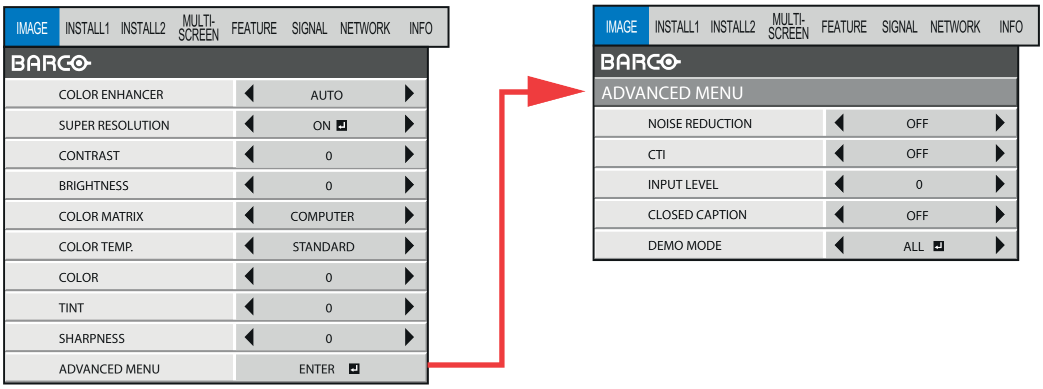
IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

LAMP 1 TIME (LOW)	****H
LAMP 2 TIME (LOW)	****H
NEXT LAMP RELAY	*D **H
FILTER TIME	*****H
SERIAL NUMBER	********..
INPUT	**COMPUTER1**
RESOLUTION	**1024 x 768**
VERTICAL FREQUENCY	**60.00 Hz**
HORIZONTAL FREQUENCY	**48.36 kHz**
SYNC. TYPE	**5 WIRE**

Image 5-12

5.3 Image menu

Overview



COLOR ENHANCER	AUTO
SUPER RESOLUTION	ON ↵
CONTRAST	0
BRIGHTNESS	0
COLOR MATRIX	COMPUTER
COLOR TEMP.	STANDARD
COLOR	0
TINT	0
SHARPNESS	0
ADVANCED MENU	ENTER ↵

ADVANCED MENU

NOISE REDUCTION	OFF
CTI	OFF
INPUT LEVEL	0
CLOSED CAPTION	OFF
DEMO MODE	ALL ↵

Image 5-13

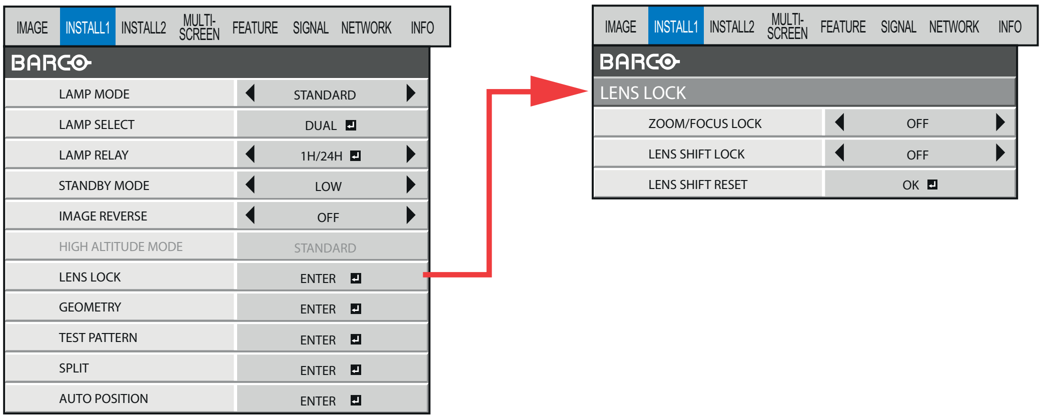
Item	Setting	Function
COLOR ENHANCER	AUTO	Select to optimize the settings automatically depending on the input signal. (Select this option for normal use.)
	PRESENTATION	Select to make the displayed image look bright and crisp.
	STANDARD	Select to make the displayed image look natural.
	THEATER	This option, suitable for viewing movies, makes the displayed image look soft and smooth.
	sRGB	Select to give priority to the color reproducibility.
	CLEAR BASE	Select to obtain the color close to that of the X-ray film (clear base).
	BLUE BASE	Select to obtain the color close to that of the X-ray film (blue base).
	USER ↵	Select to set the gamma curve, BrilliantColor™ or dynamic contrast.
	MULTI-SCREEN ↵	You can set the gamma curve and BrilliantColor™ in the multi-screen application.
SUPER RESOLUTION	ON ↵ / OFF	Use to emphasize the fineness of the image.
CONTRAST	±20	Use to adjust the contrast of the projected image.
BRIGHTNESS	±20	Use to adjust the brightness of the projected image.
COLOR MATRIX	COMPUTER / VIDEO	Use to adjust the predetermined tone of each color.
	FLAT	Use to disable COLOR MATRIX
	USER ↵	Use to emphasize only certain colors or to correct the tonal deviation of only certain colors.
COLOR TEMP.	STANDARD / LOW / HIGH	Select from the predetermined color temperatures.
	USER ↵	Use to adjust the color temperature to a desired value.
COLOR	±10	Use to adjust the color thickness of the projected image.
TINT	±10	Use to adjust the color tint of the projected image.
SHARPNESS	±5	Use to adjust the sharpness of the projected image.
ADVANCED MENU	ENTER ↵	The ADVANCED MENU is displayed for the following settings.
NOISE REDUCTION	ON / OFF	Use to reduce noise and roughness in the image when noisy video signal is input.

Item	**Setting**	**Function**
CTI	ON / OFF	Use to correct smeared color boundaries.
INPUT LEVEL	±5	For analog signal input: The input level of video signal differs among devices to be connected. High input level causes solid white in displayed image and low input level causes displayed image to get dark. Use this menu to adjust the input level of analog video signal.
	AUTO / ENHANCED / NORMAL	For digital signal input: AUTO: The proper setting is automatically selected. (Selectable only when HDMI signal is input.) ENHANCED: Select when solid black occurs. NORMAL: Select when grayish black occurs.
CLOSED CAPTION	OFF	Does not display captions.
	CC1 / CC2	Displays captions.
DEMO MODE	ALL ↵	Use to demonstrate the effect of SUPER RESOLUTION, COLOR MATRIX, and DYNAMIC CONTRAST.
	DYNAMIC CONTRAST ↵	Use to demonstrate the effect of DYNAMIC CONTRAST.
	SUPER RESOLUTION ↵	Use to demonstrate the effect of SUPER RESOLUTION.
	COLOR MATRIX ↵	Use to demonstrate the effect of COLOR MATRIX.

- When COLOR ENHANCER is sRGB, CLEAR BASE or BLUE BASE, COLOR TEMP., COLOR, TINT and COLOR MATRIX can’t be adjusted.
- You can set MULTI-SCREEN in the COLOR ENHANCER menu only when EDGE BLENDING is ON or COLOR MATCHING is MANUAL or MEASURE. In this case, you cannot set any other items than MULTI-SCREEN.
- This product is not in compliance with DICOM Part 14. Do not use this product for actual medical diagnosis.
- When the setting of COLOR ENHANCER is changed, the displayed image may be disturbed.
- The effect obtained when SUPER RESOLUTION is ON varies depending on the type and resolution of the input image. In addition, the vertical line of the colored characters may be blurred.
- When the COMPUTER1, COMPUTER2, DVI, HDMI or SDI (for PHWU-81B only) is selected as the input source, COLOR and TINT can’t be adjusted.
- TINT is available only when the NTSC signal is input.
- INPUT LEVEL is unavailable when the digital signal is supplied from the YCBCR/YPBPR terminal of the connected device.
- Captions are not displayed while information about the menu or input signal selection is being displayed on the screen.
- The closed caption function displays text information included in the NTSC signal, which is mainly used for TV broadcasting in North America.

5.4 Installation 1 menu

Overview



LAMP MODE ◀ STANDARD ▶
LAMP SELECT DUAL ↵
LAMP RELAY ◀ 1H/24H ↵ ▶
STANDBY MODE ◀ LOW ▶
IMAGE REVERSE ◀ OFF ▶
HIGH ALTITUDE MODE STANDARD
LENS LOCK ENTER ↵
GEOMETRY ENTER ↵
TEST PATTERN ENTER ↵
SPLIT ENTER ↵
AUTO POSITION ENTER ↵

ZOOM/FOCUS LOCK ◀ OFF ▶
LENS SHIFT LOCK ◀ OFF ▶
LENS SHIFT RESET OK ↵

Image 5-14

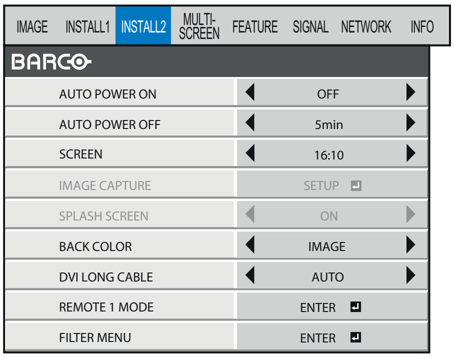
Item	Setting	Function
LAMP MODE	STANDARD	Select to optimize the settings automatically depending on the input signal. (Select this option for normal use.)
	LOW	Select to moderate the intensity of the lamp. The operating sound is reduced and the lamp lifetime becomes longer.
LAMP SELECT	DUAL ↵	LAMP 1 and LAMP 2 illuminate.
	SINGLE ↵	The lamp with shorter operation time is automatically selected at power-on.
	LAMP 1 ↵	LAMP 1 illuminates. (When it is broken or dead, LAMP 2 illuminates automatically.)
	LAMP 2 ↵	LAMP 2 illuminates. (When it is broken or dead, LAMP 1 illuminates automatically.)
LAMP RELAY	DUAL: OFF	The LAMP RELAY doesn't work.
	DUAL: 1H/24H ↵ / 2H/1W ↵	Use to set the lamp relay interval.
	SINGLE: OFF	The LAMP RELAY doesn't work.
	SINGLE: 24H ↵ / 1 WEEK ↵	Use to set the lamp relay interval.
STANDBY MODE	STANDARD	Select this option when you control the projector via the LAN, REMOTE 1 IN, and SERIAL OUT terminal during power standby.
	LOW	Select this option when you don't control the projector via the LAN, REMOTE 1 IN, and SERIAL OUT terminal during power standby. This option disables the LAN, REMOTE 1 IN, and SERIAL OUT terminal and reduces the power consumption during the power standby.
IMAGE REVERSE	OFF	Select when viewing images from the front with the projector installed on the floor.
	MIRROR	Select when viewing images projected from the behind of the screen with the projector installed on the floor.
	INVERT	Select when viewing images projected from the behind of the screen with the projector installed on the ceiling.
	MIRROR INVERT	Select when viewing images from the front with the projector installed on the ceiling.
HIGH ALTITUDE MODE	STANDARD	This projector does not support this function.
LENS LOCK	ENTER ↵	The LENS LOCK menu is displayed for the following settings.
ZOOM/FOCUS LOCK	ON / OFF	Use to enable or cancel the FOCUS LOCK and ZOOM LOCK.
LENS SHIFT LOCK	ON / OFF	Use to enable or cancel the LENS SHIFT LOCK.
LENS SHIFT RESET	OK ↵	Use to reset the position of the lens to the factory setting.

Item	Setting	Function
GEOMETRY	ENTER ↵	The geometry adjustment menu is displayed.
TEST PATTERN	ENTER ↵	The test pattern is displayed.
SPLIT (for PHWU-81B/ PHWX-81B only)	ENTER ↵	The split screen is displayed.
PIP (for PHXG-91B only)	ENTER ↵	The picture-in-picture (PIP) screen is displayed.
AUTO POSITION	ENTER ↵	The auto position function is activated.

- Regardless of the setting of LAMP MODE, the STANDARD lamp mode is activated by default whenever the projector is turned on. When LAMP MODE has been set to LOW, the lamp mode changes from STANDARD to LOW about 2 minutes after turn-on.
- When the ambient operating temperature is high, the brightness of the lamp isn't changed by switching the lamp mode.
- When the lamp mode is switched, the projected image may flicker.
- Frequent switching of the lamp mode may damage the lamp.
- When using the projector for a long time, set LAMP RELAY.
- While the lamps are being warmed up, an icon is displayed to the right of the INSTALLATION 1 menu bar. While the icon is being displayed, you cannot set LAMP SELECT and LAMP RELAY. And an icon is displayed while the operating ambient temperature is high. While the icon is being displayed, the lamp may not brighten even when you change the LAMP MODE to STANDARD.
- After you switch the lamps and the newly selected lamp turns on, you cannot turn off the projector for approx. 1 minute.

5.5 Installation 2 menu

Overview



AUTO POWER ON	OFF
AUTO POWER OFF	5min
SCREEN	16:10
IMAGE CAPTURE	SETUP ↵
SPLASH SCREEN	ON
BACK COLOR	IMAGE
DVI LONG CABLE	AUTO
REMOTE 1 MODE	ENTER ↵
FILTER MENU	ENTER ↵

Image 5-15

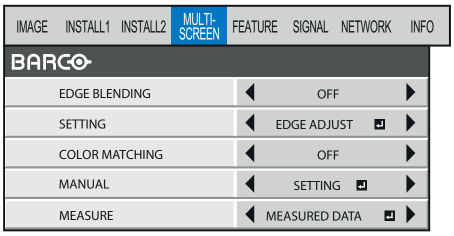
Item	Setting	Function
AUTO POWER ON	ON / OFF	When ON is chosen, the projector is automatically turn on when the power cord is plugged in the wall outlet. Choose ON when using the projector mounted on the ceiling. → The projector is in the stand-by mode when the lamp is off. Use the remote control to turn on the lamp.
AUTO POWER OFF	OFF / 5min-8hour	When no video signal is input and no operation is made, the projector automatically turns off after the selected time period. A dialog is displayed 5 minutes before the projector turns off.
SCREEN	16:10 (For PHWU-81B/PHWX-81B only)	Select this setting when using a 16:10 screen.
	16:9	Select this setting when using a 16:9 screen.
	4:3	Select this setting when using a 4:3 screen.
IMAGE CAPTURE	SETUP ↵	This projector does not support this function.
SPLASH SCREEN	ON	Fixed to ON.
BACK COLOR	BLUE / BLACK / IMAGE	Use to select the background from among BLUE, BLACK and IMAGE, which will be displayed when there is no signal input from the source. When IMAGE is selected, the splash image will be displayed.

Item	Setting	Function
DVI LONG CABLE	AUTO	Select this option for normal use.
	MANUAL ↵	Use to adjust the amount of transmission signal correction when a long DVI cable is used.
REMOTE 1 MODE	ENTER ↵	Select when controlling the projector by a control panel connected to the REMOTE 1 IN terminal.
PIN 1	GND	Unchangeable. (Fixed.)
PIN 2	POWER / NONE	Select POWER or NONE.
PIN 3	COMPUTER 1	You can assign COMPUTER 1, COMPUTER 2, VIDEO, S-VIDEO, DVI, HDMI, SDI (for PHWU-81B only), or NONE to each pin. Though the assignment can be duplicated, the pins so assigned become invalid and their settings are displayed with asterisks at both ends (like "*COMPUTER 1*").
PIN 4	COMPUTER 2	
PIN 5	VIDEO	
PIN 6	S-VIDEO	
PIN 7	DVI	
PIN 8	BLANK / NONE	Select BLANK or NONE.
PIN 9	ON/OFF	Unchangeable. (Fixed.)
RESET	OK ↵	Settings are reset to the defaults.
FILTER MENU	ENTER ↵	The filter menu for the following settings is displayed.
CLEANUP PERIOD	24H ↵/ 1 WEEK ↵/ OFF	You can set the filter cleaning interval.
MANUAL CLEANUP	OK ↵	Select this option to clean the filter immediately.

- When STANDBY MODE in the INSTALLATION 1 menu is LOW, you cannot select REMOTE 1 MODE.

5.6 Multi-Screen menu

Overview



EDGE BLENDING ◀ OFF ▶
SETTING ◀ EDGE ADJUST ↵ ▶
COLOR MATCHING ◀ OFF ▶
MANUAL ◀ SETTING ↵ ▶
MEASURE ◀ MEASURED DATA ↵ ▶

Image 5-16

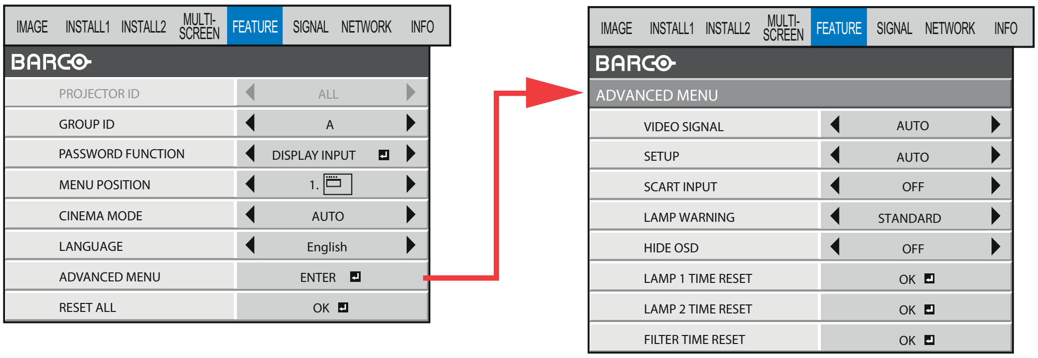
Item	Setting	Function
EDGE BLENDING	OFF	Select when using the projector alone
	ON	Select when using the projector to configure the multi-screen consisting of multiple projectors. The following settings in the SETTING become enabled to make the overlapped area of the displayed images unnoticeable.
SETTING	EDGE ADJUST ↵	Use to make the overlapped area of the screens unnoticeable in the multi-screen application. Use this setting to select the edges to be overlapped or to set the overlapped areas.
	BLACK LEVEL ↵	In the multi-screen application, the black level in the areas where images are overlapped will become bright. So, use this setting to adjust the black level in non-overlapped areas.
	BRIGHT UNIFORMITY CORRECTION ↵	Use to correct non-uniformity in the screen brightness of the single projector to facilitate edge blending.

Item	Setting	Function
	RESET ↵	Use to reset the values of EDGE ADJUST ↵, BLACK LEVEL ↵ and BRIGHT UNIFORMITY CORRECTION ↵ to the defaults.
COLOR MATCHING	OFF	Select this option when the projector is used alone.
	MANUAL	Select this option when adjusting colors while viewing the screen to correct color variations among the projectors.
	MEASURE	Select this option when adjusting colors using a measuring instrument to correct color variations among the projectors.
MANUAL	SETTING ↵	The test signal is displayed. Make adjustment so that the color tones of each image match among the adjoining projectors.
	RESET ↵	Use to reset the value of SETTING ↵ in the MANUAL to the default.
MEASURE	MEASURED DATA ↵	The test signal is displayed. Measure the brightness and chromaticity of each image using a measuring instrument (chroma meter) and enter the measurement values.
	TARGAT DATA ↵	Use to set the target chromaticity value of each color.
	RESET ↵	Use to reset the values of MEASURED DATA ↵ and TARGET DATA ↵ in the MEASURE to the defaults.

- When EDGE BLENDING is ON or COLOR MATCHING is MANUAL or MEASURE, COLOR ENHANCER in the IMAGE menu is set to MULTI-SCREEN. In this case, you cannot set any other items than MULTI-SCREEN.
- The edge blending function can be used with non-directional screens. If you use a directional screen, the areas where images are overlapped seem discontinuous depending on the viewing angle.
- The target chromaticity value entered for TARGET DATA in the MEASURE menu is just for guidance. If the obtained result doesn't match with the colors displayed on the adjoining projectors, adjust the value while viewing the screens.

5.7 FEATURE menu

Overview



PROJECTOR ID ALL
GROUP ID A
PASSWORD FUNCTION DISPLAY INPUT ↵
MENU POSITION 1.
CINEMA MODE AUTO
LANGUAGE English
ADVANCED MENU ENTER ↵
RESET ALL OK ↵

ADVANCED MENU
VIDEO SIGNAL AUTO
SETUP AUTO
SCART INPUT OFF
LAMP WARNING STANDARD
HIDE OSD OFF
LAMP 1 TIME RESET OK ↵
LAMP 2 TIME RESET OK ↵
FILTER TIME RESET OK ↵

Image 5-17

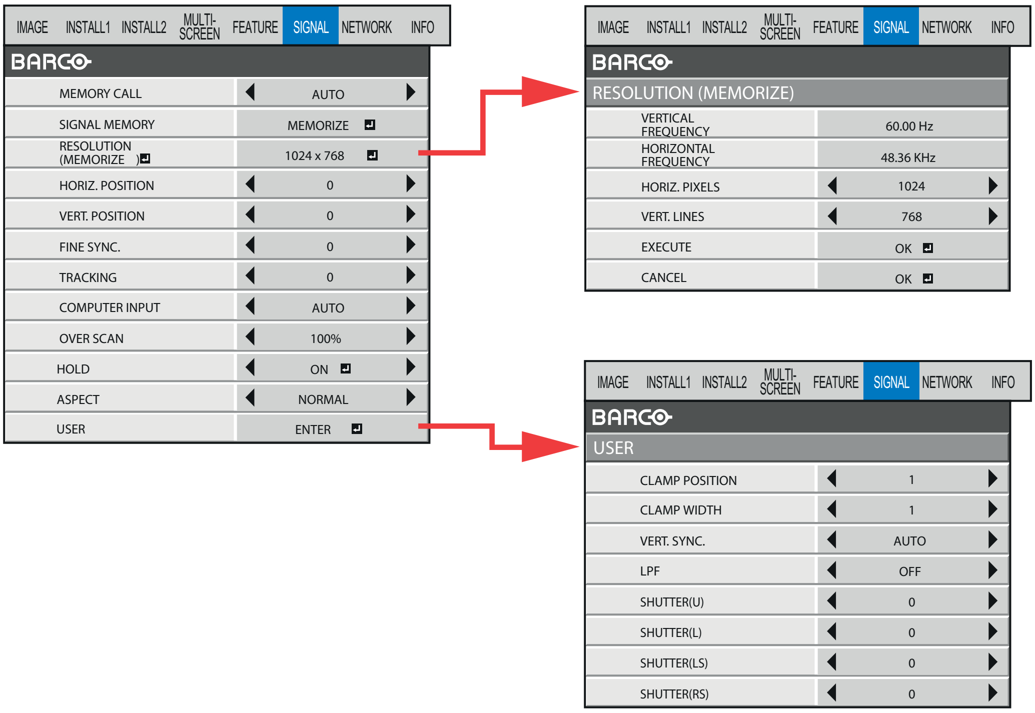
Item	Setting	Function
PROJECTOR ID	ALL	This projector does not support this function.
GROUP ID	A to Z	Use to set the ID number for controlling multiple projectors by groups for monitoring and control via the SERIAL terminal.
PASSWORD FUNCTION	DISPLAY INPUT ↵ / MENU ACCESS ↵ / SPLASH ID SCREEN ↵	Use to enable or cancel the password lock.
MENU POSITION	1 (upper left) / 2 (lower right) / 3 (center)	Use to change the position of the menu.
CINEMA MODE	AUTO	The film mode will be automatically activated when a film source signal is input. Select AUTO for normal use. When flicker occurs on the screen, frame dropping or other incorrect display occurs, or jaggies on slanting lines are remarkable, select either FILM or VIDEO, which improves the symptom better.

Item	Setting	Function
	FILM	Fixed to the film mode.
	VIDEO	The film mode will not be activated.
LANGUAGE	Different languages	Use to select the language used in the menus.
ADVANCED MENU	ENTER ↵	The ADVANCED MENU is displayed for the following settings.
VIDEO SIGNAL	AUTO / NTSC / PAL / SECAM / 4.43NTSC / PAL-M / PAL-N / PAL-60	When AUTO is selected, the appropriate video format is automatically selected depending on the input signal. If the image isn't displayed correctly, select the desired video format manually.
SETUP	AUTO	Select to change the SETUP mode automatically.
	OFF	Select to make black lighter.
	3.75% / 7.5%	Select to make black thicker.
		When 7.5% is chosen, the brightness is decreased by the setup cancel function for the U.S. Choose OFF when the image is dark.
SCART INPUT	ON / OFF	Choose ON when connecting the projector with a device equipped with the SCART terminal that can output RGB signal. SCART terminal is used mainly in Europe. Choose OFF normally. (Available only for the input signal from the COMPUTER/COMPONENT VIDEO IN-1 terminal.)
LAMP WARNING	STANDARD	When the lamp operating time exceeds 3000 hours with LAMP MODE set to LOW, a warning dialog is displayed.
	SHORT TERM	When the lamp operating time exceeds 3800 hours with LAMP MODE set to LOW, a warning dialog is displayed.
HIDE OSD	OFF	Select this option for normal use.
	ON	The auto power-off dialog, lamp warning dialog, and abnormal temperature dialog aren't displayed.
LAMP 1 TIME RESET	OK ↵	The LAMP 1 operation time is reset to 0.
LAMP 2 TIME RESET	OK ↵	The LAMP 2 operation time is reset to 0.
FILTER TIME RESET	OK ↵	The filter operation time is reset to 0.
RESET ALL	OK ↵	The menu settings are reset to the factory defaults (except the LANGUAGE, PASSWORD FUNCTION, SCREEN, and NETWORK settings).

- CINEMA MODE can be adjusted only when a TV60, TV50, 480i, 576i or 1080i signal is being displayed.
- When SCART INPUT is set to ON, normal computer signals aren't projected.
- Use a commercially available SCART-Mini D-SUB 15-pin cable when connecting this projector with an AV device equipped with the SCART terminal.
- Some AV devices equipped with the SCART terminal aren't compatible with this projector.
- The RESET ALL process may take some time to complete.
- You cannot carry out RESET ALL for approx. 2 minutes after the lamp switching or the lamp relay operation.

5.8 SIGNAL menu

Overview



MEMORY CALL	AUTO
SIGNAL MEMORY	MEMORIZE ↵
RESOLUTION (MEMORIZE ↵)	1024 x 768 ↵
HORIZ. POSITION	0
VERT. POSITION	0
FINE SYNC.	0
TRACKING	0
COMPUTER INPUT	AUTO
OVER SCAN	100%
HOLD	ON ↵
ASPECT	NORMAL
USER	ENTER ↵

RESOLUTION (MEMORIZE)

VERTICAL FREQUENCY	60.00 Hz
HORIZONTAL FREQUENCY	48.36 KHz
HORIZ. PIXELS	1024
VERT. LINES	768
EXECUTE	OK ↵
CANCEL	OK ↵

USER

CLAMP POSITION	1
CLAMP WIDTH	1
VERT. SYNC.	AUTO
LPF	OFF
SHUTTER(U)	0
SHUTTER(L)	0
SHUTTER(LS)	0
SHUTTER(RS)	0

Image 5-18

Item	Setting	Function
MEMORY CALL		Use to select the setting of SIGNAL MEMORY already saved. Impossible to select if no setting has been saved.
	AUTO	AUTO is selected by default. It optimizes the signal format automatically depending on the type of video signal supplied from the computer.
	1-xxx ↵ - 8-xxx ↵	Use to select the SIGNAL MEMORY already saved. The memory number relevant to the input signal is displayed. Press the ENTER key to clear the setting already saved.
SIGNAL MEMORY	MEMORIZE ↵	The settings in the SIGNAL menu can be saved. (See page 48.) Up to 8 settings can be saved. You can select the memory number. For example, when you save the signal setting of 720p50 to the memory 1, the memory name is displayed as 1-720p50. When the settings are already memorized in the selected number, the settings will be overwritten.
RESOLUTION (MEMORIZE ↵)		The current resolution is displayed. To change the current setting, press the ENTER key to display the RESOLUTION (MEMORIZE) menu. The new setting can be saved to MEMORY.
VERTICAL FREQUENCY	-	The vertical frequency of the currently projected video signal is displayed.
HORIZONTAL FREQUENCY	-	The horizontal frequency of the currently projected video signal is displayed.
HORIZ. PIXELS	640-1920	The number of horizontal pixels of the currently projected video signal is displayed. When you change the current setting, select EXECUTE, and then press the ENTER key, the image is automatically adjusted according to the resolution you set. The adjustment result can be saved to MEMORY
VERT. LINES	350-1200	The number of vertical lines of the currently projected video signal is displayed. When you change the current setting, select EXECUTE, and then press the ENTER key, the image is automatically adjusted according to the resolution you set. The adjustment result can be saved to MEMORY
EXECUTE	OK ↵	Press the ENTER key to start the automatic adjustment. At the completion of the automatic adjustment, a message is displayed and you can save the adjustment result to MEMORY.

Item	Setting	Function
CANCEL	OK ↵	The process to change the current resolution is canceled and the SIGNAL menu is displayed.
HORIZ. POSITION	0-999	Use to adjust the horizontal position of the projected image.
VERT. POSITION	0-999	Use to adjust the vertical position of the projected image.
FINE SYNC.	0-31	Use to eliminate flickering or blur, if appears, viewing the projected image.
TRACKING	0-9999	Use to eliminate vertical wide stripes, if appears, viewing the projected image.
COMPUTER INPUT	AUTO	The proper setting is automatically selected.
	RGB	Select this option when connecting the projector to high definition video equipment having R, G, and B output terminals.
	YCBCR/YPBPR	Select this option when connecting the projector to a DVD player or other device having Y, CB, and CR (or Y, PB, and PR) component video output terminals.
OVER SCAN	100%-90%	Use to adjust the display area of projected image.
HOLD	OFF / ON ↵	Use to adjust the image when flagging occurs near the top of the screen.
ASPECT	NORMAL	For PHWU-81B: Input video signal is displayed at the max height (1200 pixels) or max width (1920 pixels) of the panel while its aspect ratio is maintained. → When SCREEN is 16:9, the input video signal is displayed at the max height (1080 pixels) or max width (1920 pixels) of the panel. → When SCREEN is 4:3, the input video signal is displayed at the max height (1200 pixels) or max width (1600 pixels) of the panel. For PHWX-81B: Input video signal is displayed at the max height (800 pixels) or max width (1280 pixels) of the panel while its aspect ratio is maintained. → When SCREEN is 16:9, the input video signal is displayed at the max height (720 pixels) or max width (1280 pixels) of the panel. → When SCREEN is 4:3, the input video signal is displayed at the max height (800 pixels) or max width (1066 pixels) of the panel. For PHXG-91B: Input video signal is displayed at the max height (768 pixels) or max width (1024 pixels) of the panel while its aspect ratio is maintained. → When SCREEN is 16:9, the input video signal is displayed at the max height (576 pixels) or max width (1024 pixels) of the panel.
	16:9	Regardless of the type of input signal, image is displayed at 16:9 aspect ratio. Select to expand squeezed (or horizontally compressed) images such as DVD images to 16:9.
	NATIVE (for PHWU-81B/PHWX-81B only)	Input video signal is displayed at its original pixel size.
	FULL	For PHWU-81B: Select to project images in full size (1920 x 1200 pixels) irrespective of type of input signal. → When SCREEN is 16:9, images are displayed at 1920x1080 pixels. → When SCREEN is 4:3, images are displayed at 1600x1200 pixels. For PHWX-81B: Select to project images in full size (1280 x 800 pixels) irrespective of type of input signal. → When SCREEN is 16:9, images are displayed at 1280x720 pixels. → When SCREEN is 4:3, images are displayed at 1066x800 pixels. For PHXG-91B: Select to project images in full size (1024 x 768 pixels) irrespective of type of input signal.

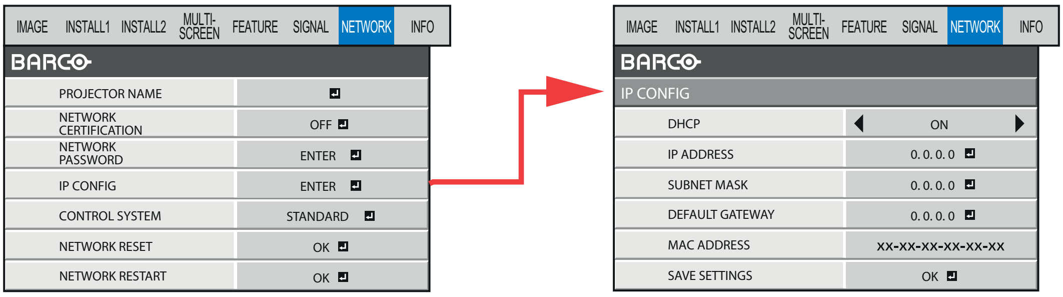
Item	**Setting**	**Function**
	4:3	Regardless of the type of input signal, image is displayed at 4:3 aspect ratio.
	USER ↵	Displays the detailed settings.
USER	ENTER ↵	The USER menu is displayed for the following adjustments.
CLAMP POSITION	1-255	Use to correct solid white or solid black in the projected image.
CLAMP WIDTH	1-63	Use to correct solid black in the projected image.
VERT. SYNC.	AUTO / OFF	Use to adjust the image when its motion doesn't run smoothly. Select AUTO for normal use.
LPF	ON / OFF	Use to select whether or not to enable the LPF.
SHUTTER(U)	0-259 (for PHWU-81B) / 0-142 (for PHWX-81B) / 0-126 (for PHXG-91B	Use to adjust the image when noise appears on the top part of the image.
SHUTTER(L)	0-259 (for PHWU-81B) / 0-142 (for PHWX-81B) / 0-126 (for PHXG-91B)	Use to adjust the image when noise appears on the bottom part of the image.
SHUTTER(LS)	0-311 (for PHWU-81B) / 0-192 (for PHWX-81B) / 0-128 (for PHXG-91B)	Use to adjust the image when noise appears on the left half of the image.
SHUTTER(RS)	0-311 (for PHWU-81B) / 0-192 (for PHWX-81B) / 0-128 (for PHXG-91B)	Use to adjust the image when noise appears on the right half of the image.

- Though horizontal strips may appear on the enlarged projected image, such symptom is not a malfunction.
- When you change the horizontal or vertical position to a large extent, noise may appear
- The adjustable range of the vertical position varies depending on the type of the input signal. Though the image may stay in the same position even when the setting value is changed, such symptom is not a malfunction.
- When you increase the setting value of OVER SCAN, noise may appear on the screen.
- When 16:9 is selected by SCREEN, you cannot set ASPECT to 16:9.
- When 4:3 is selected by SCREEN, you cannot set ASPECT to 4:3.
- ASPECT-USER setting supports the COMPUTER1, COMPUTER2, DVI, and HDMI terminals only. Therefore, you cannot select USER for other terminals.

You can set the IMAGE menu and the SIGNAL menu only when the signal is supplied.

5.9 NETWORK menu

Overview



PROJECTOR NAME	↵
NETWORK CERTIFICATION	OFF ↵
NETWORK PASSWORD	ENTER ↵
IP CONFIG	ENTER ↵
CONTROL SYSTEM	STANDARD ↵
NETWORK RESET	OK ↵
NETWORK RESTART	OK ↵

IP CONFIG

DHCP	◀ ON ▶
IP ADDRESS	0. 0. 0. 0 ↵
SUBNET MASK	0. 0. 0. 0 ↵
DEFAULT GATEWAY	0. 0. 0. 0 ↵
MAC ADDRESS	xx-xx-xx-xx-xx-xx
SAVE SETTINGS	OK ↵

Image 5-19

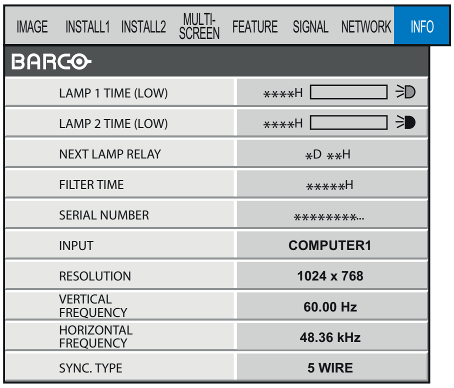
Item	**Setting**	**Function**
PROJECTOR NAME	*****... ↵	Set the name to identify the projector. Enter up to 15 characters (alphabets or numeric characters).

Item	Setting	Function
NETWORK CERTIFICATION	ON ↵ / OFF ↵	Select whether to enable the network certification or not. Select OFF for normal use.
IP CONFIG	ENTER ↵	Select this setting for IP Configuration.
DHCP	ON	Select this setting when you obtain IP CONFIG automatically by DHCP server.
	OFF	Select this setting when you set IP CONFIG manually.
IP ADDRESS	***.***.***.*** ↵	Press the ENTER key to set IP ADDRESS. When DHCP is set to ON, you cannot change this setting.
SUBNET MASK	***.***.***.*** ↵	Press the ENTER key to set SUBNET MASK. When DHCP is set to ON, you cannot change this setting.
DEFAULT GATEWAY	***.***.***.*** ↵	Press the ENTER key to set DEFAULT GATEWAY. When DHCP is set to ON, you cannot change this setting.
MAC ADDRESS	XX-XX-XX-XX-XX-XX	Displays MAC ADDRESS.
SAVE SETTINGS	OK ↵	Saves the IP CONFIG settings. When the IP CONFIG is not changed, you cannot select SAVE SETTINGS.
CONTROL SYSTEM	STANDARD ↵	Select this setting when using Projector Toolset.
	AMX ↵	Select when using a controller made by AMX.
	CRESTRON ↵	Select this setting when using the controller or software of Crestron Electronics, Inc.
NETWORK RESET	OK ↵	Resets the Network Setting.
NETWORK RESTART	OK ↵	Press the ENTER key to restart the network function.

- AMX does not support network certification. When setting CONTROL SYSTEM to AMX, set NETWORK CERTIFICATION to OFF.

5.10 INFORMATION menu

Overview



LAMP 1 TIME (LOW)	****H
LAMP 2 TIME (LOW)	****H
NEXT LAMP RELAY	*D **H
FILTER TIME	*****H
SERIAL NUMBER	********...
INPUT	COMPUTER1
RESOLUTION	1024 x 768
VERTICAL FREQUENCY	60.00 Hz
HORIZONTAL FREQUENCY	48.36 kHz
SYNC. TYPE	5 WIRE

Image 5-20

Item	Description
LAMP 1 TIME (LOW)	This item shows the lamp operation time calculated based on that the LAMP MODE of LAMP 1 is LOW. → When the LAMP MODE is STANDARD, this item shows a longer lamp operating time than the actual time. → When the lamp operating time is 0 to 10 hours, "0H" is displayed. The lamp operating time exceeding 10 hours is indicated by the actual hours. → When the lamp operating time reaches 3000 hours, the bar turns to yellow. When it reaches 3800 hours, the bar turns to red. → The icon displayed to the right of the bar shows the lamp status. Yellow: On, Red: End of lamp life or error such as illumination failure, Black: Off

Item	Description
LAMP 2 TIME (LOW)	This item shows the lamp operation time calculated based on that the LAMP MODE of LAMP 2 is LOW. → When the LAMP MODE is STANDARD, this item shows a longer lamp operating time than the actual time. → When the lamp operating time is 0 to 10 hours, “0H” is displayed. The lamp operating time exceeding 10 hours is indicated by the actual hours. → When the lamp operating time reaches 3000 hours, the bar turns to yellow. When it reaches 3800 hours, the bar turns to red. → The icon displayed to the right of the bar shows the lamp status. Yellow: On, Red: End of lamp life or error such as illumination failure, Black: Off
NEXT LAMP RELAY	The next lamp relay time is displayed.
FILTER TIME	The filter operation time is displayed.
SERIAL NUMBER	The serial number of the projector is displayed.
INPUT	Indicates the name of the terminal to which the currently projected video signal is being input.
RESOLUTION	Indicates the resolution of the currently projected video signal.
VERTICAL FREQUENCY	Indicates the vertical frequency of the currently projected video signal.
HORIZONTAL FREQUENCY	Indicates the horizontal frequency of the currently projected video signal.
SYNC. TYPE	Indicates the type of the sync signal for the currently projected video signal.

- NEXT LAMP RELAY isn’t displayed when LAMP RELAY is OFF or LAMP SELECT is LAMP 1 or LAMP 2 in the INSTALLATION 1 menu.

6. ADJUSTMENTS WITH THE ADVANCED MENU

6.1 To adjust the brightness (CONTRAST and BRIGHTNESS)

How to adjust

1. Display the *IMAGE* menu.
2. Select *CONTRAST* or *BRIGHTNESS* by pressing the ▲ or ▼ key.
3. Adjust the selected item by pressing the ◄ or ► key.
4. To cancel the menu, press the **MENU** key

Contrast

Select to adjust the contrast of the image. Every time the ► key is pressed, the image becomes brighter and more defined. Every time the ◄ key is pressed, the image becomes darker and less defined.

Brightness

Every time the ► key is pressed, the image becomes brighter. Every time the ◄ key is pressed, the image becomes darker.

6.2 To adjust the color (COLOR and TINT)

how to adjust

1. Display the *IMAGE* menu.
2. Select *COLOR* or *TINT* by pressing the ▲ or ▼ key.
   → COLOR or TINT is unavailable when COMPUTER1, COMPUTER2, DVI or HDMI is selected as the input source.
   → TINT is available only when the NTSC signal is input.
3. Adjust the selected item by pressing the ◄ or ► key.
4. To cancel the menu, press the **MENU** key.

Color

Use to adjust the color thickness of the projected image. Every time the ► key is pressed, the color becomes thicker.

Every time the ◄ key is pressed, the color becomes lighter.

Tint

Use to adjust the tint of the projected image. Every time the ► key is pressed, the image appears more greenish.

Every time the ◄ key is pressed, the image appears more reddish.

6.3 To sharpen or soften the projected image (SHARPNESS)

How to adjust

1. Display the *IMAGE* menu.
2. Select *SHARPNESS* by pressing the ▲ or ▼ key.
3. Adjust the selected item by pressing the ◄ or ► key.
4. To cancel the menu, press the **MENU** key.

6.4 To adjust the tone of white (COLOR TEMP.)

What can be done?

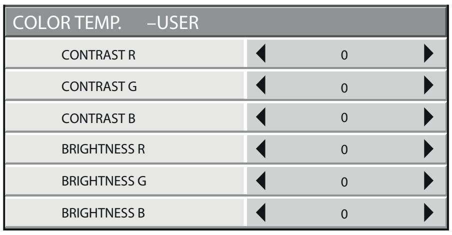
A preset color temperature (white tone) can be selected or you can use a customized color temperature.

How to select

1. Display the *IMAGE* menu.
2. Select *COLOR TEMP.* by pressing the ▲ or ▼ key.
3. Select your desired color temperature by pressing the ◄ or ► key.
4. To cancel the menu, press the **MENU** key.

To customize the color temperature

1. Select *COLOR TEMP.* in the *IMAGE* menu.
2. Press the ◄ or ► key to select *USER* ↵.
3. Press the **ENTER** key.
4. Press the ▲ or ▼ key to select the desired item.



COLOR TEMP. –USER

CONTRAST R	0
CONTRAST G	0
CONTRAST B	0
BRIGHTNESS R	0
BRIGHTNESS G	0
BRIGHTNESS B	0

Image 6-1

5. Press the ◄ or ►key to adjust the selected item.
6. Repeat step 4 and step 5 for optimum adjustment results.
7. To cancel the menu, press the **MENU** key.

Enabling stored user color temperature

1. Set *COLOR TEMP.* to *USER* ↵ in the *IMAGE* menu.

About color temperature

Color temperature is a way to show the differences in white. White of which temperature is low appears reddish. When the color temperature rises, white appears bluish. For example, you can change the color temperature using the following procedures.

To raise the color temperature: Increase the CONTRAST B (blue) and decrease the CONTRAST R (red).

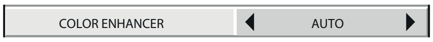
To reduce the color temperature: Decrease the CONTRAST B (blue) and increase the CONTRAST R (red).

→ If you set all of CONTRAST R, G, and B to negative values, the original brightness of the image can't be obtained even when you maximize CONTRAST in the IMAGE menu.

6.5 Color Enhancer

With the IMAGE menu

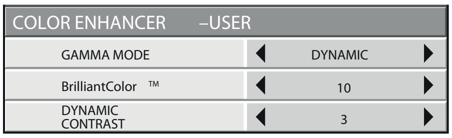
1. Display the *IMAGE* menu.
2. Select *COLOR ENHANCER* by pressing the ▲ or ▼ key.



COLOR ENHANCER AUTO

Image 6-2

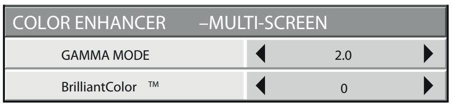
3. Select *USER* ↵ or *MULTI-SCREEN* ↵ by pressing the ◄ or ► key.



COLOR ENHANCER –USER

GAMMA MODE	DYNAMIC
BrilliantColor ™	10
DYNAMIC CONTRAST	3

Image 6-3



COLOR ENHANCER –MULTI-SCREEN

GAMMA MODE	2.0
BrilliantColor ™	0

Image 6-4

Important: You can set MULTI-SCREEN only when EDGE BLENDING is ON or COLOR MATCHING is MANUAL or MEASURE in the MULTI-SCREEN menu.

4. Press the **ENTER** key.

   The detailed menu for the color enhancer is displayed.

5. Select an item you want to set by pressing the ▲ or ▼ key.

GAMMA mode

Use this item to set the gamma optimally.

When USER is selected:

DYNAMIC	Select when viewing images supplied from the computer.
NATURAL	Select when viewing images supplied from the video device.
DETAIL	Select when viewing images of which brightness should be kept relatively low, such as movies and music performance.

When MULTI-SCREEN is selected:

1.8/2.0/2.2	Select the gamma characteristics from 1.8th, 2.0th, and 2.2nd power.

BrilliantColor™

Use this item to make the colors having medium brightness such as yellow and skin tone look natural. Press the ◄ key to decrease the value to lessen the effect. Press the ► key to increase the value to heighten the effect. (BrilliantColor™ doesn't work at value 0.)

Dynamic contrast

Use this item to sharpen the images by improving the contrast.

When you set the larger value, this function works more effective, and when you set the smaller value, it works less effective.

This function does not work when this item is set to OFF.

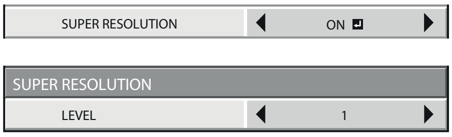
Select a setting value by pressing the ◄ or ► key.

→ For more enhanced color reproduction, set BrilliantColor™ to 0.

6.6 Adjusting the fineness of the image (SUPER RESOLUTION)

How to adjust

1. Display the *IMAGE* menu.
2. Select *SUPER RESOLUTION* by pressing the ▲ or ▼ key.



SUPER RESOLUTION ◄ ON ↵ ►

SUPER RESOLUTION

LEVEL ◄ 1 ►

Image 6-5

3. Press the ◄ or ► key to select *ON* ↵.
4. Press the **ENTER** key.
5. Make adjustment using the ◄ or ► key.

Important

When you make SUPER RESOLUTION adjustment, the colors of the menu may be obscured, but this is not a failure.

6.7 Adjusting the tone of each color (COLOR MATRIX)

How to adjust

1. Display the *IMAGE* menu.
2. Select *COLOR MATRIX* by pressing the ▲ or ▼key.

COLOR MATRIX ◄ COMPUTER ►

Image 6-6

3. Press the ◄ or ► key to select *USER* ↵

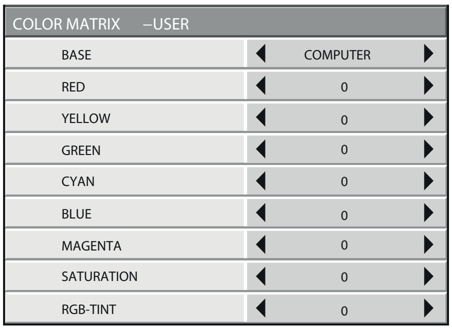

COLOR MATRIX –USER
BASE COMPUTER
RED 0
YELLOW 0
GREEN 0
CYAN 0
BLUE 0
MAGENTA 0
SATURATION 0
RGB-TINT 0

Image 6-7

4. Press the **ENTER** key.
5. Select an item you want to set using the ▲ or ▼ key.
    - To set COLOR MATRIX that is used as the base, select BASE.
    - If you want to adjust the saturation of all colors of the image, select SATURATION.
    - If you want to adjust the balance of all colors of the image, select RGB-TINT.
6. Press the ◄ or ► key to adjust the color balance of the selected color.
7. Repeat step 5 and step 6 for optimum adjustment results.

Note

→ When the input signal is VIDEO or COMPUTER, the items in the COLOR MATRIX-USER menu are automatically set to the predetermined values. You can change these values manually.

→ To disable the COLOR MATRIX adjustment, select FLAT in step 3.

→ When you make COLOR MATRIX adjustment, the colors of the menu will change, but this is not a failure.

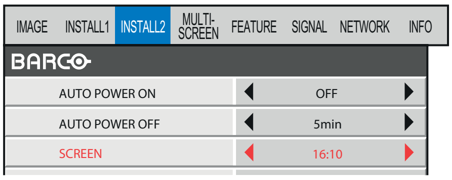
6.8 Setting the screen size

About screen size

Change the setting of the SCREEN according to the type of the screen to be used.

How to change

1. Display the *INSTALLATION 2* menu.
2. Select *SCREEN* by pressing the ▲ or ▼ key.



AUTO POWER ON OFF
AUTO POWER OFF 5min
SCREEN 16:10

Image 6-8

3. Select your desired aspect ratio by pressing the ◄ or ► key.

   You can select the aspect ratio from 16:10 (for PHWU-81B/PHWX- 81B only), 16:9, and 4:3.
4. To cancel the menu, press the **MENU** key.

6.9 Setting the aspect ratio

About aspect ratio

You can change the aspect ratio of the input video signal (or the ratio of width to height of the image). Change the setting according to the type of the screen to be used or your preference.

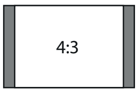
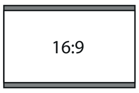
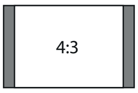
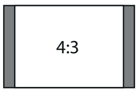
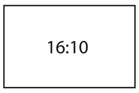
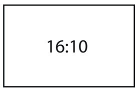
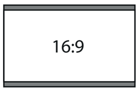
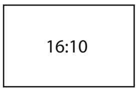
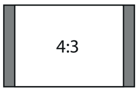
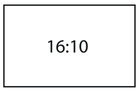
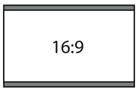
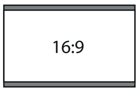
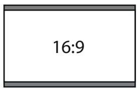
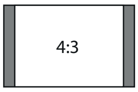
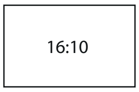
How to set

1. Display the *SIGNAL* menu.
2. Select *ASPECT* by pressing the ▲ or ▼ key.

3. Select your desired aspect ratio by pressing the ◄ or ► key.
   - Select the aspect ratio from NORMAL, 16:9, NATIVE (for PHWU-81B/PHWX-81B only), 4:3, and FULL.
   - When 16:9 is selected by SCREEN in the INSTALLATION 2 menu, 16:9 cannot be selected.
   - When 4:3 is selected by SCREEN in the INSTALLATION 2 menu, 4:3 cannot be selected.
   - The tables on pages 46 and 47 show the image display patterns depending on the settings.
4. To cancel the menu, press the **MENU** key.

For PHWU-81B:

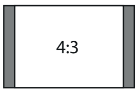
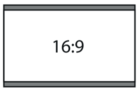
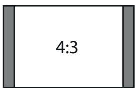
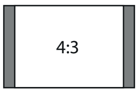
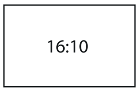
When SCREEN is 16:10:

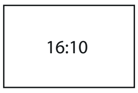
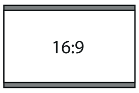
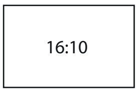
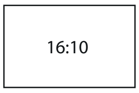
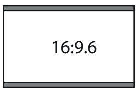
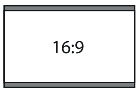
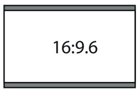
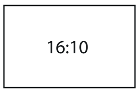
Setting Input signal	NORMAL	16:9	NATIVE	4:3	FULL
	Input video signal is displayed at the max height (1200 pixels) or max width (1920 pixels) of the panel while its aspect ratio is maintained.	Regardless of the type of input signal, image is displayed at 16:9 aspect ratio (1920 x 1080 pixels). Select to expand squeezed (or horizontally compressed) images such as DVD images to 16:9.	Input video signal is displayed at its original pixel size. (When the pixel size is larger than the panel size, only the center part of the image is displayed.)	Regardless of the type of input signal, image is displayed at 4:3 aspect ratio (1600 x 1200 pixels	Regardless of the type of input signal, image is displayed at the full panel size (1920 x 1200 pixels).
UXGA signal 1600 x 1200 (4:3)	 1600 x 1200	 1920 x 1080	 1600 x 1200	 1600 x 1200	 1920 x 1200
WUXGA signal 1920 x 1200 (16:10)	 1920 x 1200	 1920 x 1200	 1920 x 1200	 1600 x 1200	 1920 x 1200
1080p signal 1920 x 1080 (16:9)	 1920 x 1080	 1920 x 1080	 1920 x 1080	 1600 x 1200	 1920 x 1200

- In such cases as when you keep projecting images in the narrower area than the screen for a long time and then change the mode to FULL, the masking areas may remain as afterimage around the displayed image. Consult your dealer in this case.
- If you change the screen setting, the aspect setting is automatically changed to NORMAL. Therefore, in such a case, set the desired aspect ratio again.

For PHWX-81B:

When SCREEN is 16:10:

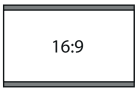
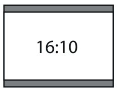
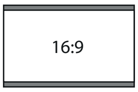
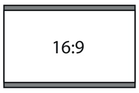
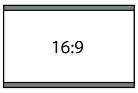
Setting Input signal	NORMAL	16:9	NATIVE	4:3	FULL
	Input video signal is displayed at the max height (800 pixels) or max width (1280 pixels) of the panel while its aspect ratio is maintained.	Regardless of the type of input signal, image is displayed at 16:9 aspect ratio (1280 x 720 pixels). Select to expand squeezed (or horizontally compressed) images such as DVD images to 16:9.	Input video signal is displayed at its original pixel size. (When the pixel size is larger than the panel size, only the center part of the image is displayed.)	Regardless of the type of input signal, image is displayed at 4:3 aspect ratio (1066 x 800 pixels).	Regardless of the type of input signal, image is displayed at the full panel size (1280 x 800 pixels).
XGA signal 1024 x 768 (4:3)	 1066 x 800	 1280 x 720	 1024 x 768	 1066 x 800	 1280 x 800

WXGA signal 1280 x 800 (16:10)	 1280 x 800	 1280 x 720	 1280 x 800	 1066 x 800	 1280 x 800
WXGA signal 1280 x 768 (16:9.6)	 1280 x 768	 1280 x 720	 1280 x 768	 1066 x 800	 1280 x 800

- In such cases as when you keep projecting images in the narrower area than the screen for a long time and then change the mode to FULL, the masking areas may remain as afterimage around the displayed image. Consult your dealer in this case.
- If you change the screen setting, the aspect setting is automatically changed to NORMAL. Therefore, in such a case, set the desired aspect ratio again.

For PHXG-91B:

When SCREEN is 4:3:

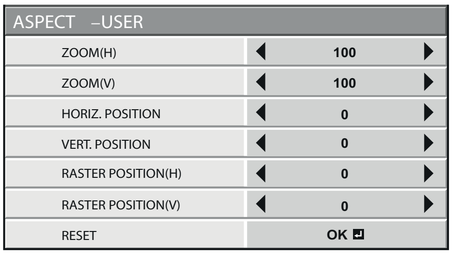
Setting	NORMAL	16:9	FULL
Input signal	Input video signal is displayed at the max height (768 pixels) or max width (1024 pixels) of the panel while its aspect ratio is maintained.	Regardless of the type of input signal, image is displayed at 16:9 aspect ratio (1024 x 576 pixels). Select to expand squeezed (or horizontally compressed) images such as DVD images to 16:9.	Regardless of the type of input signal, image is displayed at the full panel size (1024 x 768 pixels).
XGA signal 1024 x 768 (4:3)	 1024 x 768	 1024 x 576	 1024 x 768
WXGA signal 1280 x 800 (16:10)	 1024 x 640	 1024 x 576	 1024 x 768
1080p signal 1920 x 1080 (16:9)	 1024 x 576	 1024 x 576	 1024 x 768

- When a 16:9 image is kept displayed for a long time before displaying FULL image, the afterimages of the black bars may appear on the FULL image screen. Consult your dealer in this case.
- If you change the screen setting, the aspect setting is automatically changed to NORMAL. Therefore, in such a case, set the desired aspect ratio again.

6.10 Adjusting the detailed setting of ASPECT

How to adjust

1. Display the *SIGNAL* menu.
2. Select *ASPECT* by pressing the ▲ or ▼ key.
3. Press the ◄ or ► key to select *USER* ↵.



ASPECT –USER

ZOOM(H)	100
ZOOM(V)	100
HORIZ. POSITION	0
VERT. POSITION	0
RASTER POSITION(H)	0
RASTER POSITION(V)	0
RESET	OK

Image 6-9

ASPECT-USER setting supports the COMPUTER1, COMPUTER2, DVI, and HDMI terminals only. Therefore, you cannot select USER for other terminals.

4. Press the **ENTER** key.
5. Select an item you want to set using the ▲ or ▼ key.

ZOOM(H)

The horizontal image size is adjusted using the center of the image as the base point. The setting range is 50% to 500%.

ZOOM(V)

The vertical image size is adjusted using the center of the image as the base point. The setting range is 50% to 500%.

HORIZ. POSITION

Use to adjust the horizontal position of the projected image. The setting range is -999 to +999.

VERT. POSITION

Use to adjust the vertical position of the projected image. The setting range is -999 to +999.

RASTER POSITION(H)

When the supplied image is not projected on the entire display area, the horizontal location of the projected image can be adjusted within the area. The setting range is -960 to +960 (for PHWU-81B), -640 to +640 (for PHWX-81B), or -512 to +512 (for PHXG-91B).

RASTER POSITION(V)

When the supplied image is not projected on the entire display area, the vertical location of the projected image can be adjusted within the area. The setting range is -540 to +540 (for PHWU-81B), -400 to +400 (for PHWX-81B), or -384 to +384 (for PHXG-91B).

RESET

Press the **ENTER** key to reset the *USER* settings.

Important

- Noise may appear on the screen depending on the combination of the type of the video signal being projected and the setting values of the ZOOM(H), ZOOM(V), HORIZ. POSITION, VERT. POSITION, RASTER POSITION(H), and RASTER POSITION(V). In such cases, set these values in the range where the image is displayed without noise.
- The adjustable range of each setting varies depending on the type of the input signal.

6.11 Saving the setting in the SIGNAL MEMORY

What can be done?

You can save the settings of the SIGNAL menu using the SIGNAL MEMORY.

You can save multiple signal settings for one signal format and switch the method according to use. Up to 8 settings can be saved.

Example

	AUTO	Memory number in the SIGNAL MEMORY					
		1–720p50	2–720p50	3–1080i60	4–xxx	···	8–xxx
SINGAL menu	ANY SIGNAL	720p50	720p50	1080i60	-		-

To save the setting in the SIGNAL MEMORY

1. Display the *SIGNAL* menu.

2. Select *SIGNAL MEMORY* while *AUTO* is selected in the MEMORY CALL by pressing the ▲ or ▼ key.
3. Select *MEMORIZE* ↵ and press the **ENTER** key.
4. Select your desired memory number by pressing the ◄ or ► key.
5. Press the **ENTER** key to save the memory.
    - To save the new setting, select a new memory number. The memory number of the MEMORY CALL changes to a new one after saving the setting.
    - When the setting in the selected memory number is changed, the changed setting is automatically saved.

To select the saved memory by the MEMORY CALL

1. Display the *SIGNAL* menu.
2. Select *MEMORY CALL* by pressing the ▲ or ▼ key.
3. Select your desired memory number by pressing the ◄ or ► key.
    - Only the memory number relevant to the input signal can be selected.
    - When the same signal is input on the next time, the selected memory number is still memorized.

6.12 Adjusting a computer image

How to adjust

This projector automatically selects a proper signal format according to the type of video signal supplied from the computer. However, video signals from the computer may not be projected correctly depending on the types of the computer and images to be projected. In such a case, make adjustment according to the flowchart below.

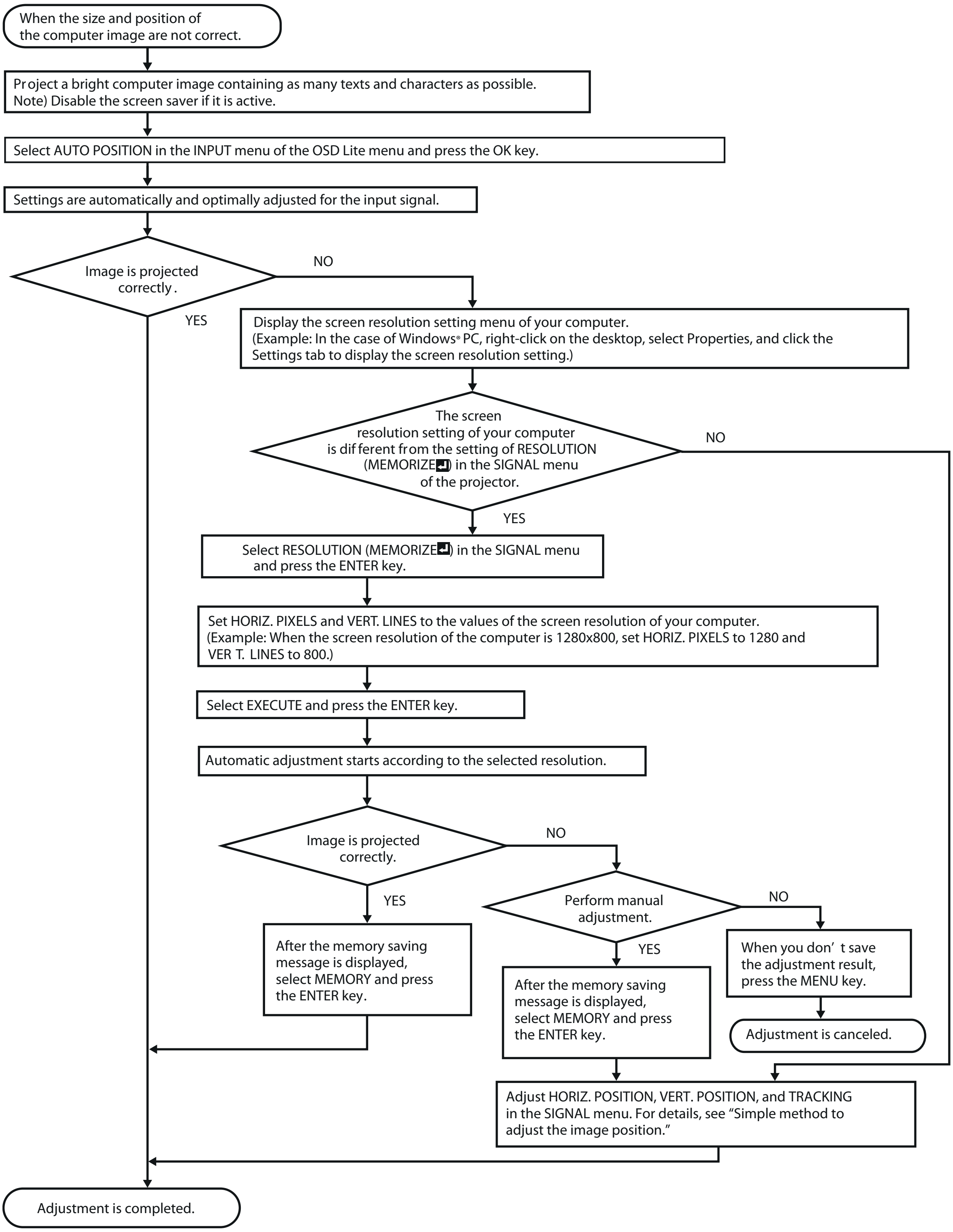

When the size and position of the computer image are not correct.
Project a bright computer image containing as many texts and characters as possible. Note) Disable the screen saver if it is active.
Select AUTO POSITION in the INPUT menu of the OSD Lite menu and press the OK key.
Settings are automatically and optimally adjusted for the input signal.
Image is projected correctly.
NO
YES
Display the screen resolution setting menu of your computer. (Example: In the case of Windows® PC, right-click on the desktop, select Properties, and click the Settings tab to display the screen resolution setting.)
The screen resolution setting of your computer is different from the setting of RESOLUTION (MEMORIZE↵) in the SIGNAL menu of the projector.
NO
YES
Select RESOLUTION (MEMORIZE↵) in the SIGNAL menu and press the ENTER key.
Set HORIZ. PIXELS and VERT. LINES to the values of the screen resolution of your computer. (Example: When the screen resolution of the computer is 1280x800, set HORIZ. PIXELS to 1280 and VERT. LINES to 800.)
Select EXECUTE and press the ENTER key.
Automatic adjustment starts according to the selected resolution.
Image is projected correctly.
NO
YES
Perform manual adjustment.
NO
YES
After the memory saving message is displayed, select MEMORY and press the ENTER key.
After the memory saving message is displayed, select MEMORY and press the ENTER key.
When you don't save the adjustment result, press the MENU key.
Adjustment is canceled.
Adjust HORIZ. POSITION, VERT. POSITION, and TRACKING in the SIGNAL menu. For details, see "Simple method to adjust the image position."
Adjustment is completed.

Image 6-10

6.13 How to adjust the image supplied from the computer using the menu

What to do when

Carry out the following procedures according to the symptoms.

Wide strips appear.	Adjust TRACKING in the SIGNAL menu.
The projected image flickers.	Adjust FINE SYNC. in the SIGNAL menu.
The projected image is blurred.	

The projected image is displaced horizontally.	Adjust HORIZ. POSITION in the SIGNAL menu. Every time the ◄ key is pressed, the image moves to the right. Every time the ► key is pressed, the image moves to the left.
The projected image is displaced vertically.	Adjust VERT. POSITION in the SIGNAL menu. Every time the ◄ key is pressed, the image moves down. Every time the ► key is pressed, the image moves up.
The top part of the image flags.	Change the setting of HOLD in the SIGNAL menu. Select ON ↵, press the ENTER key, and adjust BEGIN or END to minimize the flagging.
A solid black or solid white appears in the image.	Adjust CLAMP POSITION or CLAMP WIDTH in the SIGNAL - USER menu.
The motion doesn't run smoothly.	Adjust VERT. SYNC. in the SIGNAL - USER menu. Select AUTO for normal use.
Noise appears on the right or left half of the image.	Adjust SHUTTER(LS) or SHUTTER(RS) in the SIGNAL - USER menu.
Noise appears on the top or bottom part of the image.	Adjust SHUTTER(U) or SHUTTER(L) in the SIGNAL - USER menu.

Do not change the settings of the SIGNAL menu in normal use.

How to adjust

1. Display the *SIGNAL* menu.
2. Press the ▲ or ▼ key to select an item to adjust.
3. Adjust the selected item by pressing the ◄ or ► key.
4. To cancel the menu, press the **MENU** key.

6.14 Simple method to adjust the image position

To adjust the horizontal position

1. Align the left edge of the image with the left side of the screen by adjusting HORIZ. POSITION. Then, align the right edge of the image with the right side of the screen by adjusting TRACKING.
2. Repeat step 1 above to complete the adjustment of the horizontal position.

To adjust the vertical position

1. Align the upper edge of the image with the upper side of the screen by adjusting VERT. POSITION.

6.15 LPF (Progressive filter)

About LPF

You can select whether or not to enable the LPF. Vertical or horizontal streak noise may appear on the projected image, depending on the type of the DVD player or game console you use. In such a case, you can reduce such streak noise by enabling the LPF. However, projected images become softened slightly.

6.16 Image displayed on the multi-screen, joints

About multi-screen

You can configure a multi-screen display using multiple projectors.

You can make the joints of the images displayed on the projectors unnoticeable and adjust the differences in the brightness and the color tint of them.

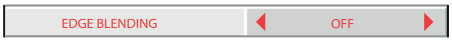
Important: Depending on the installation condition, the projected image may fluctuate due to the effect of the exhausted wind. In such a case, open up the space between the projectors so that the image doesn't fluctuate (approximately 70 cm or more).

You can make the joints of the images projected on the projectors unnoticeable using the menu settings.

Making the joints unnoticeable

1. Display the *MULTI-SCREEN* menu.

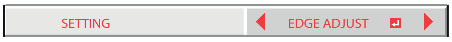
2. Select *EDGE BLENDING* by pressing the ▲ or ▼ key.



EDGE BLENDING ◀ OFF ▶

Image 6-11

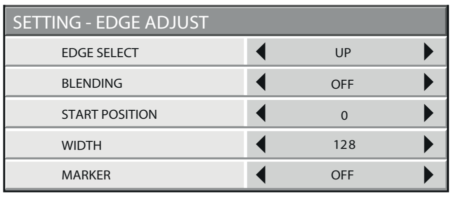
3. Select *ON* by pressing the ◀ or ▶ key.
4. Select *SETTING* by pressing the ▲ or ▼ key.



SETTING ◀ EDGE ADJUST ↵ ▶

Image 6-12

5. Select *EDGE ADJUST* ↵ by pressing the ◀ or ▶ key.



SETTING - EDGE ADJUST

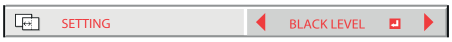
EDGE SELECT	UP
BLENDING	OFF
START POSITION	0
WIDTH	128
MARKER	OFF

Image 6-13

6. Press the **ENTER** key.
7. Select an item you want to set by pressing the ▲ or ▼ key.

EDGE SELECT	Select the joint you want to adjust from UP, LOW, LEFT, and RIGHT.
BLENDING	When you select ON, the joint selected by EDGE SELECT becomes unnoticeable.
START POSITION	Set the position to start the edge adjustment. When UP or LOW is selected: • 0 to 270 (for PHWU-81B) • 0 to 192 (for PHWX-81B/PHXG-91B) When LEFT or RIGHT is selected: • 0 to 480 (for PHWU-81B) • 0 to 256 (for PHWX-81B/PHXG-91B)
WIDTH	Set the width of the overlap of the joint selected by EDGE SELECT. When UP or LOW is selected: • 4 to 524 (for PHWU-81B) • 4 to 368 (for PHWX-81B/PHXG-91B) When LEFT or RIGHT is selected: • 4 to 944 (for PHWU-81B) • 4 to 496 (for PHWX-81B/PHXG-91B) The setting range of START POSITION and WIDTH vary depending on their setting values.
MARKER	When you select ON, a marker for easily locating the overlap of the joint is displayed.

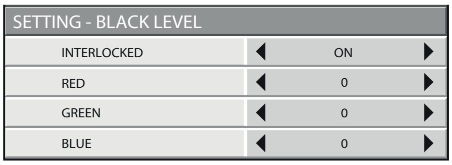
8. Select a setting value by pressing the ◀ or ▶ key.
9. Repeat step 7 and step 8, if necessary.
10. Press the **MENU** key once.
11. Select *BLACK LEVEL* ↵ by pressing the ◀ or ▶ key.



SETTING ◀ BLACK LEVEL ↵ ▶

Image 6-14

12. Press the **ENTER** key.



SETTING - BLACK LEVEL

INTERLOCKED	ON
RED	0
GREEN	0
BLUE	0

Image 6-15

13. Select an item you want to set by pressing the ▲ or ▼ key.

→ Adjust the black level in areas other than the overlapped areas.

→ When you set INTERLOCKED to ON, you can adjust RED, GREEN, and BLUE simultaneously. When you set it to OFF, you can adjust RED, GREEN, and BLUE separately.

14. Select a setting value by pressing the ◄ or ► key.

15. Repeat step 13 and step 14, if necessary.

16. Press the **MENU** key once.

17. Select *BRIGHT UNIFORMITY CORRECTION* ⏎ by pressing the ◄ or ► key.

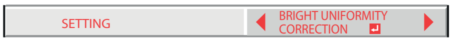


Image 6-16

→ When EDGE BLENDING is ON, the brightness of the projected images is made even.

18. Press the **ENTER** key.

The BRIGHT UNIFORMITY CORRECTION dialog box and the correction position marker are displayed.

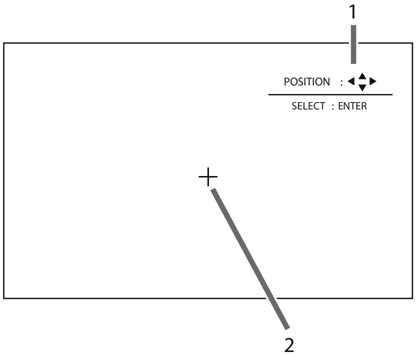


Image 6-17
1 BRIGHT UNIFORMITY CORRECTION dialog box
2 Correction position marker

Every time you press the ENTER key, the BRIGHT UNIFORMITY CORRECTION dialog box shows POSITION and LEVEL alternately.

POSITION	Press the ▲, ▼, ◄, or ► key to move the correction position marker.
LEVEL	Press the ◄, or ► key to adjust the correction amount.

19. Cancel the BRIGHT UNIFORMITY CORRECTION dialog box.
Press any key other than the ▲, ▼, ◄, or ►, and ENTER keys to clear the dialog box. Or, the dialog box disappears in 10 seconds after the last use.

20. To cancel the menu, press the **MENU** key.

6.17 Adjusting the color variations

How to adjust

You can adjust the variations in the colors of the images displayed on multiple projectors using the menu settings.

Adjustment while viewing the screen

1. Display the *MULTI-SCREEN* menu.
2. Select *COLOR MATCHING* by pressing the ▲ or ▼ key.

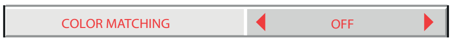


Image 6-18

3. Select *MANUAL* by pressing the ◄ or ► key.
4. Select *MANUAL* by pressing the ▲ or ▼ key.

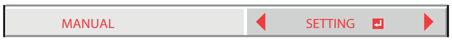
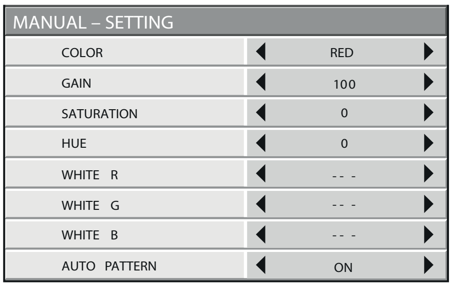


Image 6-19

5. Select *SETTING* by pressing the ◄ or ► key.
6. Press the **ENTER** key.



MANUAL – SETTING

COLOR RED

GAIN 100

SATURATION 0

HUE 0

WHITE R -- -

WHITE G -- -

WHITE B -- -

AUTO PATTERN ON

Image 6-20

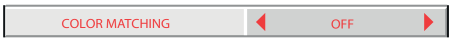
7. Select an item you want to set by pressing the ▲ or ▼ key.

   Select the color you want to adjust using COLOR.

   When you set AUTO PATTERN to ON, the test pattern of each color is displayed.
8. Select a setting value by pressing the ◄ or ► key.
9. Repeat step 7 and step 8, if necessary.

Adjustment using a chroma meter

1. Display the *MULTI-SCREEN* menu.
2. Select *COLOR MATCHING* by pressing the ▲ or ▼ key.

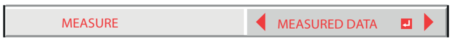


COLOR MATCHING OFF

Image 6-21

3. Select *MEASURE* by pressing the ◄ or ► key.

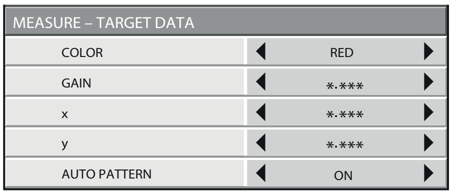
   Set now the measured brightness and the chromaticity coordinates
4. Select *MEASURE* by pressing the ▲ or ▼ key.



MEASURE MEASURED DATA ↵

Image 6-22

5. Select *MEASURED DATA* ↵ by pressing the ◄ or ► key.
6. Press the **ENTER** key.



MEASURE – TARGET DATA

COLOR RED

GAIN *.***

x *.***

y *.***

AUTO PATTERN ON

Image 6-23

7. Select an item you want to set by pressing the ▲ or ▼ key.

   → Select the color you want to adjust using COLOR.

   → When you set AUTO PATTERN to ON, the test pattern of each color is displayed.
8. Select a setting value by pressing the ◄ or ► key.
9. Repeat step 7 and step 8, if necessary.

6.18 Resetting the settings

About reset

You can reset the SETTING, MANUAL, and MEASURE settings to the factory defaults.

How to reset

1. Display the *MULTI-SCREEN* menu.
2. Select *SETTING*, *MANUAL* or *MEASURE* by pressing the ▲ or ▼ key.
3. Select *RESET* by pressing the ◄ or ► key.
4. Press the **ENTER** key.

6.19 When the projected image is distorted

What should happen:

When the projected image is distorted, carry out any of the KEYSTONE, CORNERSTONE, and CURVED mode adjustments to correct the distortion.

When the image distorts in a trapezoid shape, use the KEYSTONE-mode adjustment. For fine adjustment of the image shape, use the CORNERSTONE-mode adjustment. To adjust the image projected on a curved surface, use the CURVED-mode adjustment.

Every time you press the ENTER key selecting the GEOMETRY menu, the menu switches in the order of KEYSTONE, CORNERSTONE, CURVED, INSTALLATION 1 menu, KEYSTONE....

6.19.1 Adjust using Keystone mode

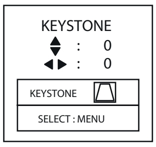
What can be done?

When the image distorts in a trapezoid shape, use the KEYSTONE-mode adjustment.

How to adjust

1. Display the *INSTALLATION 1* menu.
2. Select *GEOMETRY* by pressing the ▲ or ▼ key.
3. Press the **ENTER** key.

   The KEYSTONE menu appears.



KEYSTONE
▲▼ : 0
◄► : 0
KEYSTONE
SELECT : MENU

Image 6-24

4. Make adjustment using the ▲, ▼, ◄, or ► key.

   Every time you press the **MENU** key, the adjustment menu changes as follows: KEYSTONE → RESET → KEYSTONE ...

KEYSTONE menu

You can correct the distortion vertically or horizontally focusing on the screen center.

In the following cases (for front projection):

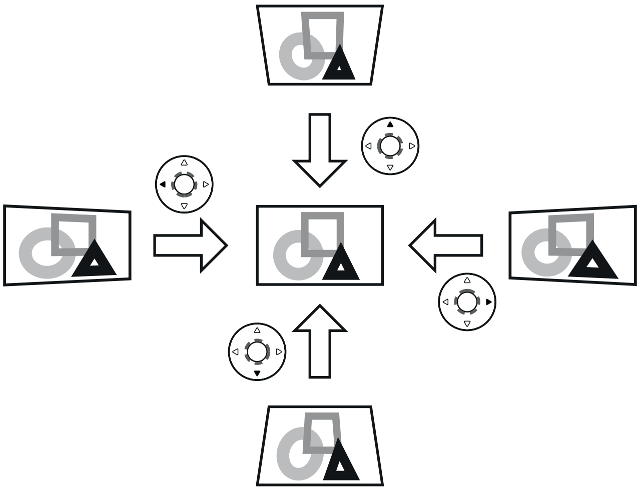


Image 6-25

When you press the ◄ or ► key in the RESET mode, the distortion correction is reset.

Important

- For proper KEYSTONE-mode adjustment results, reset the lens to the factory-adjusted position using LENS SHIFT RESET in the INSTALLATION 1 menu before carrying out KEYSTONE-mode adjustment.
- When the KEYSTONE-mode adjustment is carried out, the adjustment value is indicated. Note that this value doesn't mean a projection angle.
- When the KEYSTONE-mode adjustment takes effect, the resolution decreases. In addition, stripes may appear or straight lines may bend in images with complicated patterns. They are not due to product malfunctions.
- When the KEYSTONE-mode adjustment is performed, the displayed image may be distorted.
- Depending on the installation conditions of the projector and the screen, a perfect rectangular image and the proper aspect ratio may not be obtained. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.
- Noise may appear on the screen during the KEYSTONE-mode adjustment because of the type of the video signal being projected and the setting values of the KEYSTONE-mode adjustment. In such cases, set the KEYSTONE-mode adjustment values in the range where the image is displayed without noise.
- When you carry out the KEYSTONE-mode adjustment and the CURVED-mode adjustment in combination, the adjustment range becomes narrower than that in the case where you carry out these adjustments individually. When setting the KEYSTONE-mode adjustment value to 11 or larger, you cannot use the CURVED-mode adjustment.
- When carrying out the KEYSTONE-mode adjustment while the option lens is in use, you may not be able to obtain a perfectly rectangular image or the correct aspect ratio. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.

6.19.2 Adjustment using the CORNERSTONE mode

When using

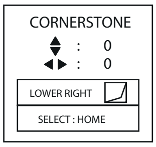
Use this adjustment for fine adjustment of the image shape. You can use this adjustment for adjusting the image displayed in the edge blending mode, too.

How adjust

1. Display the *INSTALLATION 1* menu.
2. Select *GEOMETRY* by pressing the ▲ or ▼key.
3. Press the **ENTER** key.

   The *KEYSTONE* menu appears.
4. Press the **ENTER** key again.

   The *CORNERSTONE* menu appears.



CORNERSTONE
▲▼ : 0
◀▶ : 0
LOWER RIGHT
SELECT : HOME

Image 6-26

5. Make adjustment using the ▲, ▼, ◄, or ► key.

   Every time you press the MENU key, the adjustment menu changes as follows:

   LOWER RIGHT → LOWER LEFT → UPPER RIGHT → UPPER LEFT → RESET → LOWER RIGHT ...

LOWER RIGHT, LOWER LEFT, UPPER RIGHT, or UPPER LEFT menu

You can adjust the horizontal or vertical position of the selected corner.

Example: Adjustment of the upper left corner position (UPPER LEFT)

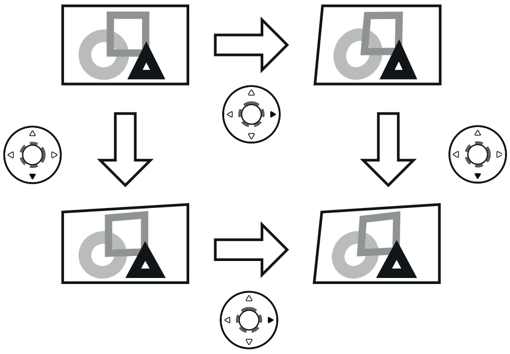


Image 6-27

When you press the ◄ or ► key in the RESET mode, the distortion correction is reset.

Important

- When the CORNERSTONE-mode adjustment takes effect, the resolution decreases. In addition, stripes may appear or straight lines may bend in images with complicated patterns. They are not due to product malfunctions.
- When the CORNERSTONE-mode adjustment is performed, the displayed image may be distorted.
- Noise may appear on the screen during the CORNERSTONE-mode adjustment because of the type of the video signal being projected and the setting values of the CORNERSTONE-mode adjustment. In such cases, set the CORNERSTONE-mode adjustment values in the range where the image is displayed without noise.
- Large distortion of the image shape or aspect ratio may not be corrected by the CORNERSTONE-mode adjustment.

6.19.3 Adjustment using the CURVED mode

When using?

Use this adjustment to adjust images projected on a curved surface.

How to adjust

1. Display the *INSTALLATION 1* menu.
2. Select *GEOMETRY* by pressing the ▲ or ▼key.
3. Press the **ENTER** key.

   The *KEYSTONE* menu appears.
4. Press the **ENTER** key twice.

   The *CURVED* menu appears.
5. Make adjustment using the ▲, ▼, ◄, or ► key.

   Every time you press the **MENU** key, the adjustment menu changes as follows: ARC → HORIZ. ORIGIN → VERT. ORIGIN → RESET → ARC...

ARC menu

You can correct the arc vertically or horizontally focusing on the screen center.

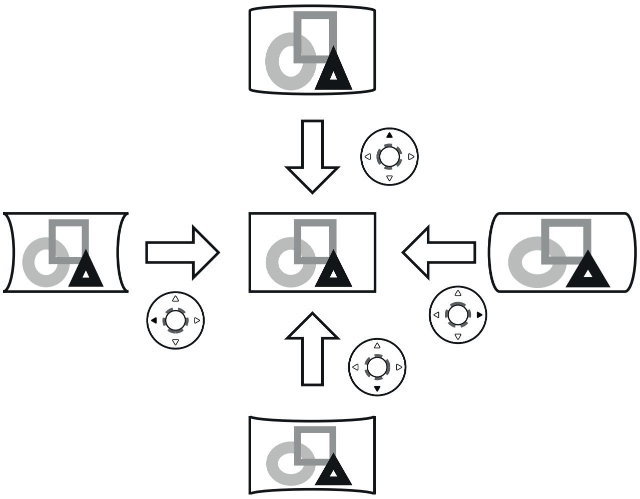


Image 6-28

HORIZ. ORIGIN or VERT. ORIGIN menu

When the CURVED-mode adjustment has excessive effect on either top or bottom or either right or left side of the screen, adjust the horizontal or vertical position of the origin to the horizontal or vertical arc. Without the arc adjustment, the image shape won't change.

Adjusting the origin to the horizontal arc

When the horizontal arc adjustment is negative (-) (or the ARC is adjusted in the ▼ direction)

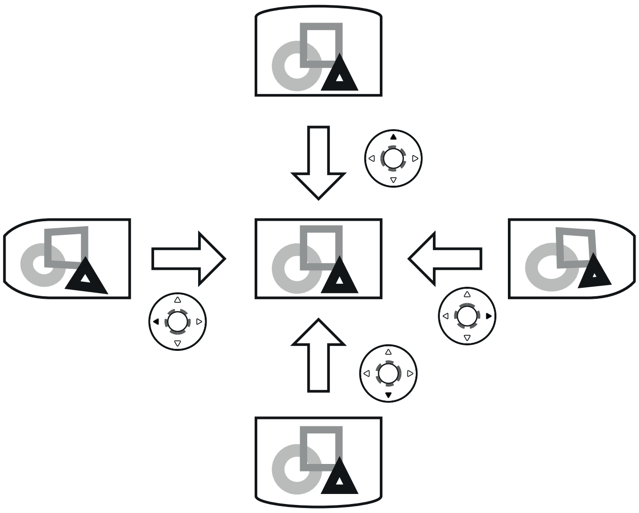


Image 6-29

When the horizontal arc adjustment is positive (+) (or the ARC is adjusted in the ▲ direction)

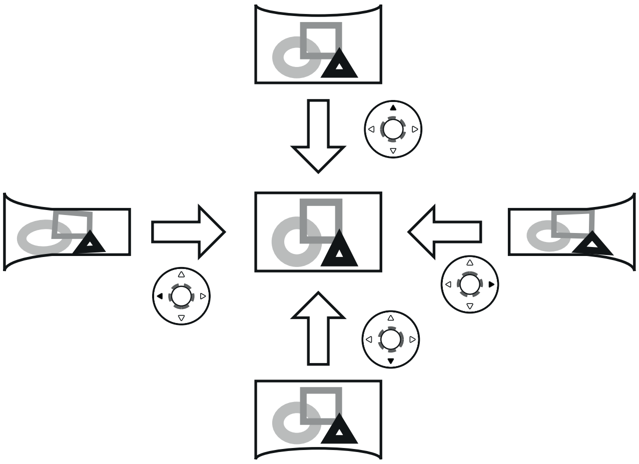


Image 6-30

Adjusting the origin to the vertical arc

When the vertical arc adjustment is negative (-) (or the ARC is adjusted in the ◄ direction)

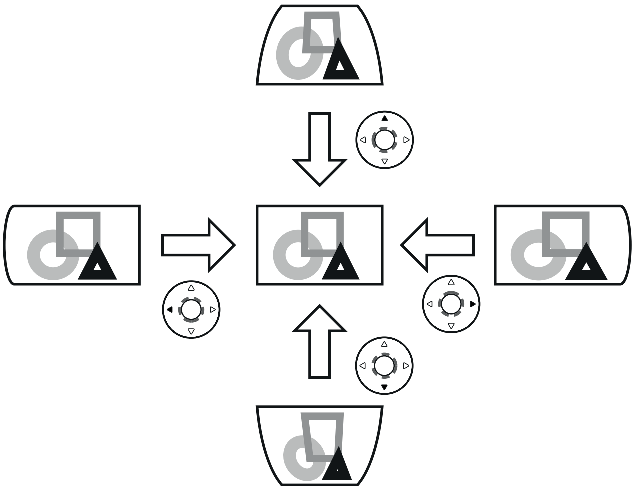


Image 6-31

When the vertical arc adjustment is positive (+) (or the ARC is adjusted in the ► direction)

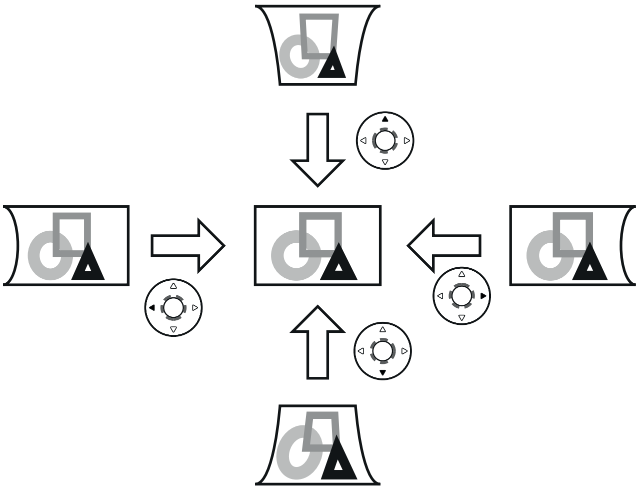


Image 6-32

When you press the ◄ or ► key in the RESET mode, the distortion correction is reset.

Important

- When the CURVED-mode adjustment takes effect, the resolution decreases. In addition, stripes may appear or straight lines may bend in images with complicated patterns. They are not due to product malfunctions.
- When the CURVED-mode adjustment is performed, the displayed image may be distorted.
- Depending on the installation conditions of the projector and the screen or the correction amount of the CURVED-mode adjustment, you may not obtain a complete rectangular screen or the correct aspect ratio. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.
- Noise may appear on the screen during the CURVED-mode adjustment because of the type of the video signal being projected and the setting values of the CURVED-mode adjustment. In such cases, set the CURVED-mode adjustment values in the range where the image is displayed without noise.
- When you carry out the KEYSTONE-mode adjustment and the CURVED-mode adjustment in combination, the adjustment range becomes narrower than that in the case where you carry out these adjustments individually. When setting the arc setting value of the CURVED-mode adjustment to 31 or larger, you cannot use the KEYSTONEmode adjustment.
- When carrying out the CURVED-mode adjustment while the option lens is in use, you may not be able to obtain a perfectly rectangular image or the correct aspect ratio. Slight distortion can be corrected by the CORNERSTONE-mode adjustment.

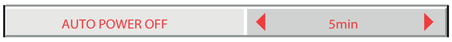
6.20 Changing the AUTO POWER OFF setting

About

The AUTO POWER OFF function of this projector is enabled by default. Change the AUTO POWER OFF setting as necessary.

How to change

1. Display the *INSTALLATION 2* menu.
2. Select *AUTO POWER OFF* by pressing the ▲ or ▼ key.



AUTO POWER OFF ◄ 5min ►

Image 6-33

3. Select your desired item by pressing the ◄ or ► key.

6.21 Setting IMAGE REVERSE

Overview

- Set IMAGE REVERSE in the INSTALLATION 1 menu according to the orientation of the projector. The default setting is OFF.
- Select OFF for the combination of floor installation and front projection.
- Select MIRROR INVERT for the combination of ceiling installation and front projection.
- Select MIRROR for the combination of floor installation and rear projection.
- Select INVERT for the combination of ceiling installation and rear projection.

How to set

1. Display the *INSTALLATION 1* menu.
2. Select *IMAGE REVERSE* by pressing the ▲ or ▼ key.

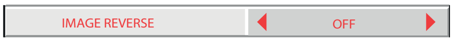


IMAGE REVERSE ◄ OFF ►

Image 6-34

3. Select *OFF*, *MIRROR*, *INVERT* or *MIRROR INVERT* by pressing the ◄ or ► key.

6.22 Displaying TEST PATTERN

How to display

1. Display the *INSTALLATION 1* menu.
2. Select *TEST PATTERN* by pressing the ▲ or ▼ key.
3. Press the **ENTER** key.

   The cross hatch (red) is displayed.
4. Press once or several times the **ENTER** key to switch to a different pattern.

   The test pattern switches in the order of “cross hatch (red)”, “cross hatch (green)”, “cross hatch (blue)”, “100% white”, “100% black”, “horizontal color bars”, “vertical color bars”, and *INSTALLATION 1* menu.

7. INITIAL NETWORK SETTINGS

Where to find the settings

You can set the network of the projector using the *NETWORK* menu in the *ADVANCED* menu of the *OSD Lite* menu.

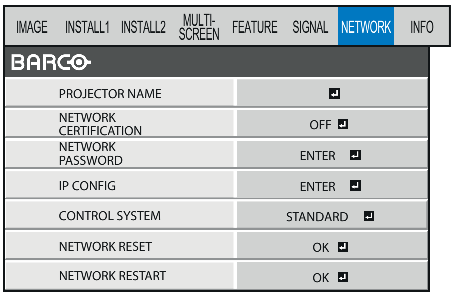


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO

PROJECTOR NAME
NETWORK CERTIFICATION: OFF
NETWORK PASSWORD: ENTER
IP CONFIG: ENTER
CONTROL SYSTEM: STANDARD
NETWORK RESET: OK
NETWORK RESTART: OK

Image 7-1

7.1 Setting Projector Name

How to set

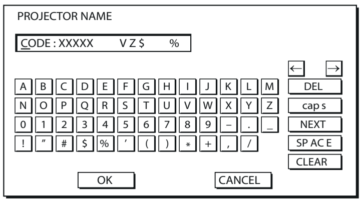
1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *PROJECTOR NAME*.

PROJECTOR NAME

Image 7-2

3. Press the **ENTER** key.

   PROJECTOR NAME screen appears.


PROJECTOR NAME
A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 - . _
! " # $ % ' ( ) * + , /
←
→
DEL
caps
NEXT
SPACE
CLEAR
OK
CANCEL

CODE : XXXXX V Z $ %

Image 7-3

4. Press the direction keys to move the key cursor, select the characters or marks to enter, and press the **ENTER** key.

   Projector Name can be set using up to 15 characters including alphabets (capital/small), numeric characters, or marks.

← key:	Shifting the position of enter cursor to the left for each character.
→ key:	Shifting the position of enter cursor to the right for each character.
DEL key:	Deleting the character in the position of enter cursor for each character.
caps/CAPS key:	Switching an alphabet character to CAPITAL or small.
NEXT/PREV key:	Switching the marks listed on the fourth line.
SPACE key:	Inserting a space in the position of enter cursor.
CLEAR key:	Deleting all the entered characters.

5. When selecting *OK*, the setting is completed as the name stored. However, when selecting *CANCEL*, the setting is completed without storing.

   → The display returns the NETWORK menu after selecting OK or CANCEL.

   → It may take some time to reflect the settings.

7.2 Enabling or disabling the network certification

About network certification

You can select whether or not to certify the network communication using the network password.

For details, contact your dealer.

How to enable-disable

1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *NET WORK CERTIFICATION*.

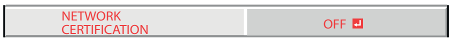
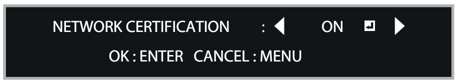

NETWORK CERTIFICATION OFF ↵

Image 7-4

3. Press the **ENTER** key.

   Confirmation dialog appears.


NETWORK CERTIFICATION : ◀ ON ↵ ▶

OK : ENTER CANCEL : MENU

Image 7-5

4. Press the ▲ or ▼ key to select *ON* ↵ or OFF ↵.
5. Press the **ENTER** key.

   → To cancel the setting, press the **MENU** key.

   → It may take some time to reflect the settings.

7.3 Network Password Settings

How to set

1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *NETWORK PASSWORD*.

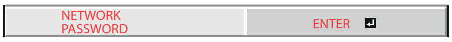
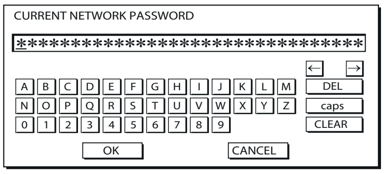

NETWORK PASSWORD ENTER ↵

Image 7-6

3. Press the **ENTER** key.

   CURRENT NETWORK PASSWORD screen appears.


CURRENT NETWORK PASSWORD

****

Image 7-7

4. Press the direction keys to move the key cursor, select the characters or marks to enter, and press the **ENTER** key.

   Password can be set using up to 32 characters including alphabets (capital/small) or numeric characters.

← key:	Shifting the position of enter cursor to the left for each character.
→ key:	Shifting the position of enter cursor to the right for each character.
DEL key:	Deleting the character in the position of enter cursor for each character.
caps/CAPS key:	Switching an alphabet character to CAPITAL or small.
CLEAR key:	Deleting all the entered characters.

   → The default password is “admin”.

5. Select *OK*, and *NEW NETWORK PASSWORD* screen appears if the entered password is correct.

If the entered password is not correct, *CURRENT NETWORK PASSWORD* screen appears again.

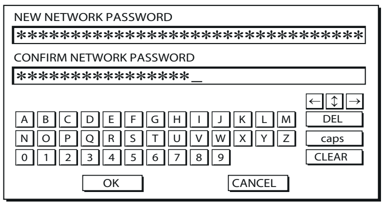


Image 7-8

6. Enter the *NEW NETWORK PASSWORD* and *CONFIRM NETWORK PASSWORD*.

   Password can be set using up to 32 characters including alphabets (capital/small) or numeric characters.

← key:	Shifting the position of enter cursor to the left for each character.
→ key:	Shifting the position of enter cursor to the right for each character.
↕ key	Shifting the position of enter cursor between NEW NETWORK PASSWORD and CONFIRM NETWORK PASSWORD.
DEL key:	Deleting the character in the position of enter cursor for each character.
caps/CAPS key:	Switching an alphabet character to CAPITAL or small.
CLEAR key:	Deleting all the entered characters.

7. When NEW NETWORK PASSWORD and CONFIRM NETWORK PASSWORD are matched, the setting is completed after changing the NETWORK PASSWORD.
   - When you select OK and the passwords you entered are matched, the setting change dialog is displayed. After the dialog disappears, the NETWORK menu is displayed.
   - When you select CANCEL, the NETWORK menu is displayed without changing the password.
   - If the entered content is not matched, NEW NETWORK PASSWORD screen appears again after an error dialog is displayed.
   - The password for the web control software of CRESTRON cannot be changed with this setting.
   - It may take some time to reflect the settings.

7.4 IP Settings

7.4.1 Start up

How to display

1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *IP CONFIG*.

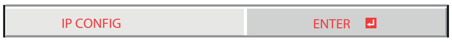
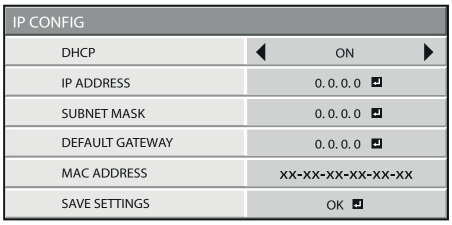


Image 7-9

3. Press the **ENTER** key.

   IP CONFIG menu appears.



IP CONFIG

DHCP	◀ ON ▶
IP ADDRESS	0. 0. 0. 0
SUBNET MASK	0. 0. 0. 0
DEFAULT GATEWAY	0. 0. 0. 0
MAC ADDRESS	xx-xx-xx-xx-xx-xx
SAVE SETTINGS	OK

Image 7-10

7.4.2 Setting or Clearing DHCP

DHCP

Abbreviation for Dynamic Host Configuration Protocol. This protocol automatically assigns IP Address to networked devices.

How to set or clear

1. Display the *IP CONFIG* menu.
2. Press the ▲ or ▼key to select *DHCP*.

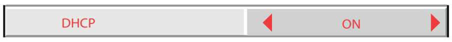

DHCP ◀ ON ▶

Image 7-11

3. Press the ◀ or ▶ key to select *ON* or *OFF*.

   → When setting DHCP to ON, IP ADDRESS, SUBNET MASK, and DEFAULT GATEWAY cannot be set. If you set those settings, set DHCP to OFF and perform the IP settings as the following procedures.

   → Until the execution of SAVE SETTINGS, the change is not saved.

7.4.3 IP Address Settings

IP Address

Numerical address to identify networked computers.

How to set

1. Display the *IP CONFIG* menu.
2. Press the ▲ or ▼ key to select *IP ADDRESS*.

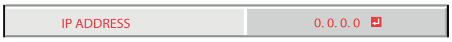
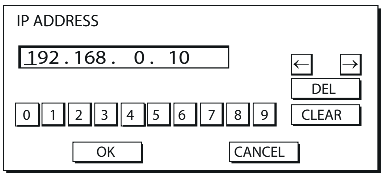

IP ADDRESS 0. 0. 0. 0

Image 7-12

3. Press the **ENTER** key.

   IP ADDRESS screen appears.


IP ADDRESS

192 . 168 . 0 . 10

Image 7-13

4. Press the direction keys to move the key cursor, select the numbers to enter, and press the **ENTER** key.

   Set the numeric value within the range from 0 to 255. However, set the numeric value for the final octet within the range from 1 to 254.

← key:	Shifting the position of enter cursor to the left.
→ key:	Shifting the position of enter cursor to the right.
DEL key:	Deleting the character in the position of enter cursor for each character.
CLEAR key:	Deleting all the entered characters.

5. When selecting OK, the setting is completed as the IP ADDRESS stored temporarily. However, when selecting CANCEL, the setting is completed without storing.

   → When the setting you entered is correct, the IP CONFIG menu is displayed. If the entered content is not correct, the IP CONFIG menu is displayed after an error dialog is displayed.

   → Until the execution of SAVE SETTINGS, the change is not saved.

7.4.4 Subnet Mask Settings

Subnet Mask

A numeric value to define the number of bits used for a network address of a divided network (or subnet) in an IP Address.

How to set

1. Display the *IP CONFIG* menu.
2. Press the ▲ or ▼ key to select *SUBNET MASK*.

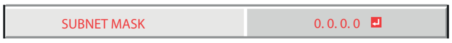
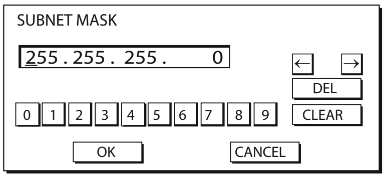

SUBNET MASK 0. 0. 0. 0

Image 7-14

3. Press the **ENTER** key.

   SUBNET MASK screen appears.


SUBNET MASK

255 . 255 . 255 . 0

Image 7-15

4. Enter the Subnet Mask.

   Refer to IP Address Settings for the detail of entering.

5. When selecting *OK*, the setting is completed as the Subnet Mask stored temporarily. However, when selecting *CANCEL*, the setting is completed without storing.

   → When the setting you entered is correct, the *IP CONFIG* menu is displayed. If the entered content is not correct, the *IP CONFIG* menu is displayed after an error dialog is displayed.

   → Until the execution of SAVE SETTINGS, the change is not saved.

7.4.5 Default Gateway Settings

Default Gateway

A server (or router) to communicate across networks (subnets) that are divided by Subnet Mask.

How to set

1. Display the *IP CONFIG* menu.
2. Press the ▲ or ▼ key to select *DEFAULT GATEWAY*.

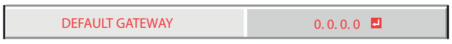
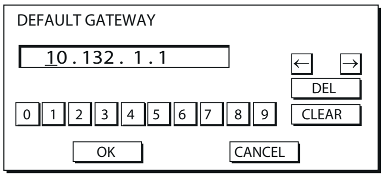

DEFAULT GATEWAY 0. 0. 0. 0

Image 7-16

3. Press the *ENTER* key.

   DEFAULT GATEWAY screen appears.


DEFAULT GATEWAY

10 . 132 . 1 . 1

Image 7-17

4. Enter the Default Gateway.

   Refer to IP Address Settings for the detail of entering.

5. When selecting *OK*, the setting is completed as the Default Gateway stored temporarily. However, when selecting *CANCEL*, the setting is completed without storing.

   → When the setting you entered is correct, the *IP CONFIG* menu is displayed. If the entered content is not correct, the *IP CONFIG* menu is displayed after an error dialog is displayed.

   → Until the execution of SAVE SETTINGS, the change is not saved.

7.4.6 Saving IP CONFIG Settings

How to save

1. Display the *IP CONFIG* menu.
2. Press the ▼ key to select *SAVE SETTINGS*.

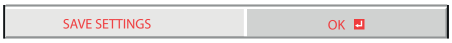

SAVE SETTINGS OK

Image 7-18

3. Press the **ENTER** key.

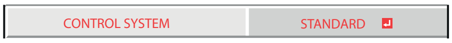
→ The setting change dialog is displayed. After the dialog disappears, the *NETWORK* menu is displayed.

→ It may take some time to reflect the settings.

7.5 Setting the control system

How to set

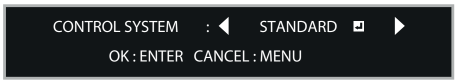
1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *CONTROL SYSTEM*.



CONTROL SYSTEM STANDARD ↵

Image 7-19

3. Press the **ENTER** key.



CONTROL SYSTEM : ◀ STANDARD ↵ ▶

OK : ENTER CANCEL : MENU

Image 7-20

4. Press the ◄ or ► key to select *STANDARD* ↵, *AMX* , or *CRESTRON* ↵.

STANDARD	Select this setting when using Projector Toolset, or RS-232C commands via LAN terminal.
AMX	Select this setting when using the controller of AMX.
CRESTRON	Select this setting when using the controller or software of Crestron Electronics, Inc.

Important: PJLink™ works regardless of the setting of CONTROL SYSTEM.

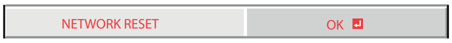
5. Press the **ENTER** key.

   It may take some time to reflect the settings.

7.6 Initialization of Network Settings

How to initialize

1. Display the *NETWORK* menu.
2. Press the ▲ or ▼ key to select *NETWORK RESET*.



NETWORK RESET OK ↵

Image 7-21

3. Press the **ENTER** key.

   Confirmation dialog appears.

4. Press the **ENTER** key again, and the Network Settings can be initialized (except for IP CONFIG).

   To cancel the initialization, press the **MENU** key.

   It may take some time to reflect the settings.

7.7 How to Use Network Function

Overview

- When connecting a computer and projector with LAN, configure the both IP Addresses in the same network group.
  If connecting in different network group, be sure to use a router. As for the settings of a router, ask the network administrator.
- Configure the IP CONFIG correctly. If the settings are not correct, the communication may be unavailable. For the detail, consult the network administrator.
- Depending on the settings of standby mode of the projector, LAN function may be unavailable.

8. LAMP RELAY

Overview

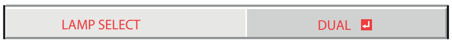
Using the lamp relay function, you can project images continuously. The lamp relay function automatically rests or switches the lamps. The lamp relay is performed when LAMP SELECT in the INSTALLATION 1 menu is set to DUAL or SINGLE in the ADVANCED menu of the OSD Lite menu.

8.1 Setting the lamp relay interval, LAMP SELECT is set to DUAL

Either of the lamps is automatically put to rest.

How to set

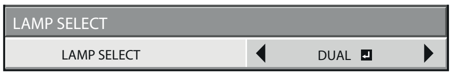
1. Display the *INSTALLATION 1* menu.
2. Select *LAMP SELECT* by pressing the ▲ or ▼ key.



LAMP SELECT DUAL ↵

Image 8-1

3. Press the **ENTER** key.

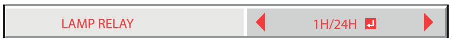


LAMP SELECT

LAMP SELECT ◄ DUAL ↵ ►

Image 8-2

4. Select DUAL ↵ by pressing the ◄ or ► key.
5. Press the **ENTER** key.
6. Select *LAMP RELAY* by pressing the ▲ or ▼ key.



LAMP RELAY ◄ 1H/24H ↵ ►

Image 8-3

7. Select 1H/24H ↵ or 2H/1W ↵ by pressing the ◄ or ► key.

1H/24H ↵	Select this setting when the lamp is operated at a specified time of the day. During the continuous projection, LAMP 1 or LAMP 2 is automatically turned off for 1 hour in 24 hours. After the interval is set, the lamps are turned off for 1 hour alternately at the specified interval.

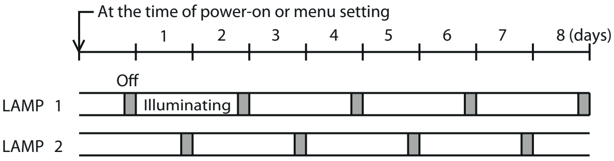

At the time of power-on or menu setting
1
2
3
4
5
6
7
8 (days)
Off
LAMP 1
Illuminating
LAMP 2

Image 8-4

2H/1W ↵	During the continuous projection, LAMP 1 or LAMP 2 is automatically turned off for 2 hours in a week. After the interval is set, the lamps are turned off for 2 hours alternately at the specified interval.

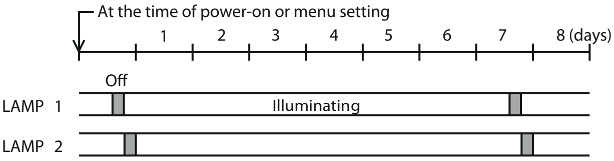

At the time of power-on or menu setting
1
2
3
4
5
6
7
8 (days)
Off
LAMP 1
Illuminating
LAMP 2

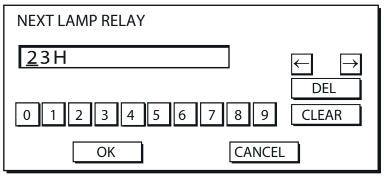
Image 8-5

8. Press the **ENTER** key.

→ When you select 1H/24H ↵ or 2H/1W ↵, the box to set the lamp relay interval is displayed.

→ When the projector is turned off, the setting is cleared and the projector resumes operation from the time of the power-on or menu setting shown in the preceding step.

1H/24H ↵

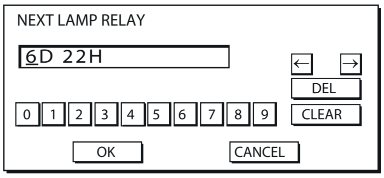


NEXT LAMP RELAY

23H

Image 8-6

2H/1W ↵



NEXT LAMP RELAY

6D 22H

Image 8-7

9. Move the key cursor using the direction keys to select the number you want to enter and then press the **ENTER** key.

   → Maximum interval

1H/24H ↵	23H (23 hours)
2H/1W ↵	6D 22H (6 days and 22 hours)
← key	Shifting the position of enter cursor to the left for each character.
→ key	Shifting the position of enter cursor to the right for each character.
DEL key	Deleting the character in the position of enter cursor for each character.
CLEAR key	Deleting all the entered characters.

→ When the value you entered meets the following conditions, an error dialog box is displayed at the screen center.

- The value has been cleared by DEL or CLEAR and left blank.
- The value you entered is out of the setting range.

1H/24H ↵	24H or over
2H/1W ↵	6D 23H or over

→ The value of each item is out of the setting range.

D	7 or over (2H/1W ↵ only)
H	24 or over

10. When selecting *OK*, the setting is completed as the lamp-switching interval stored. However, when selecting *CANCEL*, the setting is completed without storing.

    → The display returns the *LAMP RELAY* menu after selecting *OK* or *CANCEL*.

    → The setting you made is applied to NEXT LAMP RELAY in the *INFORMATION* menu.

Important

- When you use the projector continuously, the lamp relay may not be performed on time due to errors of the clock function.
- Immediately after the power-on, during the lamp selection, or during the lamp relay operation, you cannot change the setting of LAMP SELECT and LAMP RELAY.
- In the case of continuous projection, the lamps may deteriorate earlier unless they are turned off for 1 hour per week.
- When using this projector continuously for a long time of period, enable LAMP RELAY.
- The brightness and color tint vary at the time of lamp switching.

8.2 Setting the lamp relay interval, LAMP SELECT is set to SINGLE

The lamps are automatically switched and used alternately.

How to set

1. Display the *INSTALLATION 1* menu.
2. Select *LAMP SELECT* by pressing the ▲ or ▼ key.

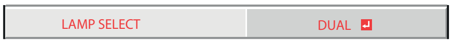
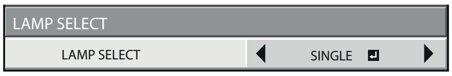

LAMP SELECT DUAL ↵

Image 8-8

3. Press the **ENTER** key.
4. Select *SINGLE* ↵ by pressing the ◄ or ► key.


LAMP SELECT

LAMP SELECT ◄ SINGLE ↵ ►

Image 8-9

5. Press the **ENTER** key.
6. Select *LAMP RELAY* by pressing the ▲ or ▼ key.

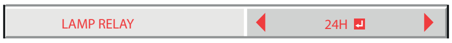

LAMP RELAY ◄ 24H ↵ ►

Image 8-10

7. Select 24H ↵ or 1 WEEK ↵ by pressing the ◄ or ► key.

24H ↵	The lamps are switched to each other every day.

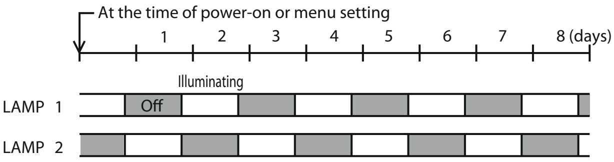

At the time of power-on or menu setting
1
2
3
4
5
6
7
8 (days)
Illuminating
LAMP 1
Off
LAMP 2

Image 8-11

1 WEEK ↵	The lamps are switched to each other every week.

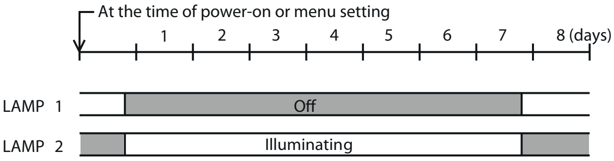
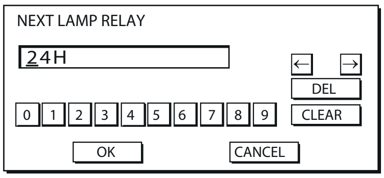

At the time of power-on or menu setting
1
2
3
4
5
6
7
8 (days)
LAMP 1
Off
LAMP 2
Illuminating

Image 8-12

8. Press the **ENTER** key.

   When you select 24H ↵ or 1 WEEK ↵, the box to set the lamp relay interval is displayed.

   24H ↵


NEXT LAMP RELAY

24H

←
→
DEL
0
1
2
3
4
5
6
7
8
9
CLEAR
OK
CANCEL

Image 8-13

   1 WEEK ↵

9. Move the key cursor using the direction keys to select the number you want to enter and then press the ENTER key.

→ Maximum interval

24H ↵	24H (24 hours)
1 WEEK ↵	7D 00H (7 days and 00 hours)
← key	Shifting the position of enter cursor to the left for each character.
→ key	Shifting the position of enter cursor to the right for each character.
DEL key	Deleting the character in the position of enter cursor for each character.
CLEAR key	Deleting all the entered characters.

→ When the value you entered meets the following conditions, an error dialog box is displayed at the screen center.

- The value has been cleared by DEL or CLEAR and left blank.
- The value you entered is out of the setting range.

24H ↵	25H or over
1 WEEK ↵	7D 01H or over

- The value of each item is out of the setting range.

D	8 or over (1 WEEK ↵ only)
H	25 or over

10. When selecting *OK*, the setting is completed as the lamp-switching interval stored. However, when selecting *CANCEL*, the setting is completed without storing.

→ The display returns the *LAMP RELAY* menu after selecting *OK* or *CANCEL*.

→ The setting you made is applied to NEXT LAMP RELAY in the INFORMATION menu.

Important

- When you use the projector continuously, the lamp relay may not be performed on time due to errors of the clock function.
- Immediately after the power-on, during the lamp selection, or during the lamp relay operation, you cannot change the setting of LAMP SELECT and LAMP RELAY.
- In the case of continuous projection, the lamps may deteriorate earlier unless they are turned off for 1 hour per week.
- When using this projector continuously for a long time of period, enable LAMP RELAY.
- The brightness and color tint vary at the time of lamp switching.

9. ADVANCED FEATURES

9.1 Password function

About the password function

This projector is equipped with the password function that is designed for prevention of wrong operation by children and restriction on operation by other than specified users. The password function has 3 modes as follows.

DISPLAY INPUT	When the projector is turned on, the startup screen (or splash screen) will appear and stay on the screen until the password is entered. When the password is entered, the startup screen will switch to the regular operation screen.
MENU ACCESS	All the keys except for the POWER key on the projector are disabled. (The keys on the remote control are enabled.) You can use this mode as a measure of prevention of wrong operation by children and restriction on operation by other than specified users.
SPLASH ID SCREEN	IMAGE CAPTURE and SPLASH SCREEN in the INSTALLATION 2 menu become unavailable. SPLASH SCREEN will be set to ON automatically.

9.1.1 Enabling the password function

How to enable

1. Display the *FEATURE* menu.
2. Press the ▲ or ▼ key to select *PASSWORD FUNCTION*.
3. Press the ◄ or ► key to change the mode among DISPLAY INPUT ↵, MENU ACCESS ↵ and SPLASH ID SCREEN ↵.

   When the password has already been set, the mode won't be changed. In such cases, press the ENTER key to cancel the password function and try again.
4. Press the **ENTER** key.

   The screen for setting the password function will appear.

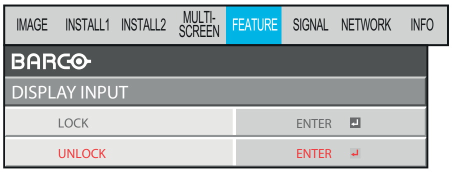


Image 9-1

5. Press the **ENTER** key.

   The screen for entering a password will appear.

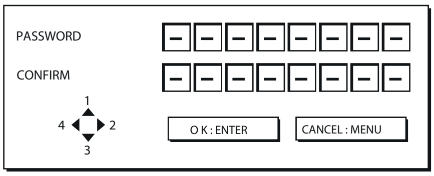


Image 9-2

6. Enter a 4 - 8 digit password using the ▲, ►, ▼ and ◄ keys.

   (▲=1, ►=2, ▼=3, ◄=4)
7. Press the **ENTER** key.

   To cancel the procedure, press the **MENU** key.
8. Enter the password again for confirmation using the same steps.
9. Press the **ENTER** key.

   → If the entered passwords don't match, an error message will appear.

   → To cancel the procedure, press the **MENU** key.

9.1.2 Cancel the password function

How to cancel

1. Display the *FEATURE* menu.
2. Press the ▲ or ▼ key to select *PASSWORD FUNCTION*.
3. Press the **ENTER** key.

   The screen for canceling the password function will appear.

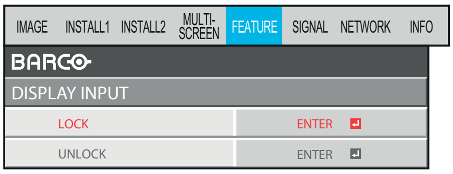


IMAGE
INSTALL1
INSTALL2
MULTI-SCREEN
FEATURE
SIGNAL
NETWORK
INFO
BARCO
DISPLAY INPUT
LOCK
ENTER
UNLOCK
ENTER

Image 9-3

4. Press the **ENTER** key.

   The screen for entering the password will appear.

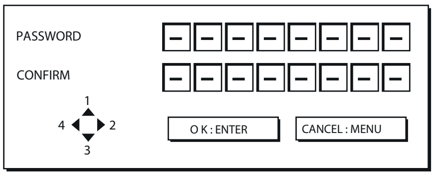

PASSWORD
CONFIRM
1
4
2
3
O K : ENTER
CANCEL : MENU

Image 9-4

5. Enter a 4 - 8 digit password using the ▲, ►, ▼ and ◄ keys.

   (▲=1, ►=2, ▼=3, ◄=4)
6. Press the **ENTER** key.

   → If you enter a wrong password, an error message will appear.

   → To cancel the procedure, press the **MENU** key.

Important

Disable the password by pressing the **MENU** and **ENTER** keys on the projector at the same time about 3 seconds

9.2 Split

for PHWU-81B/PHWX-81B only

About split

You can split the screen in two and display a computer image on the left screen and a video image on the right screen.

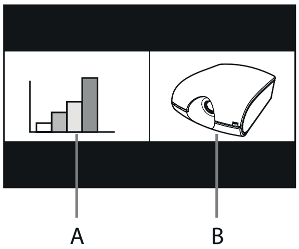


Image 9-5
A Left image
B Right image

To use the split mode:

1. Display the *INSTALLATION 1* menu in the *ADVANCED MENU*.
2. Select *SPLIT*.

3. Press **ENTER** key.

   The screen is split in two and the left and right screens display the following images:

Left screen	Image supplied to the last selected input source, VGA (COMPUTER1), 5BNC (COMPUTER2), DVI, HDMI or SDI (for PHWU-81B only)
Right screen	Image supplied to the last selected input source, VIDEO or S-VIDEO

Important

- When you press the MENU key, the screen is displayed in the normal mode.
- Also, when you change the input source, the screen is displayed in the normal mode.
- In the split mode, the picture quality settings of the input source in the normal mode to be displayed on the left screen are reflected on the entire screen.
- When no signal is input, a blue screen is displayed.
- When you input an interlace signal to the left screen, the displayed image may shake up and down slightly, but this is not a malfunction.
- When you display 60-Hz and 50-Hz video signals at the same time, motion images may not be displayed properly. In this case, set VERT. SYNC. of USER in the SIGNAL menu to OFF for the left screen.
- You cannot use the split mode unless a signal is being input.
- Displaying the screen split in two may take some time depending on the signal.

To change the input source of the left or right screen:

- To change the input source of the left screen, press the ◄ key on the remote control. Each time the the ◄ key is pressed, the input source setting changes in order of VGA (COMPUTER 1) → 5BNC (COMPUTER 2) → DVI → HDMI → SDI (for PHWU-81B only) → VGA (COMPUTER 1) ....
- To change the input source of the right screen, press the ► key on the remote control. Each time the the ► key is pressed, the input source setting changes in order of VIDEO → S-VIDEO → VIDEO ....

9.3 Picture in Picture (PIP)

for PHXG- 91B only

About Picture in Picture

One of the special features of this projector is the picture-in-picture (PIP) mode. The PIP mode allows you to view the images from different sources at the same time.

While viewing the image from the VGA (COMPUTER1), 5BNC (COMPUTER2), DVI, or HDMI input source, you can display the image from the VIDEO or S-VIDEO input source as a sub image.

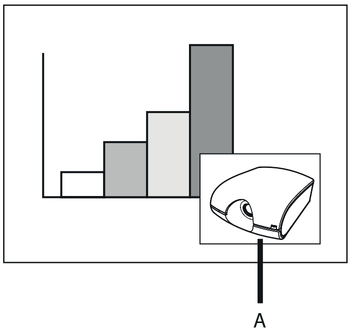


Image 9-6
A Sub image

To use the PIP mode:

1. Display the *INSTALLATION 1* menu in the *ADVANCED MENU*.
2. Select *PIP*.
3. Press **ENTER** key.

   Sub image is displayed.

4. Repeat the previous steps to remove the PIP mode.
5. To change the position of the sub image, press the ◄ or ► key on the remote control.

Important

- The PIP mode is available only when the ASPECT ratio is set to NORMAL.
- The PIP mode isn’t available with some input signals.
- When the main image signal is lost during the PIP mode, the PIP mode is disabled.
- When there is no video signal for sub image, you can’t change the display position.
- The motion may not run smoothly in the PIP mode.
- You cannot make the MULTI-SCREEN menu settings and SIGNAL menu settings in the PIP mode.
- The size of the sub image varies depending on the input signal and the settings.

9.4 Supervising and controlling by computer

What can be done?

You can supervise and control the projector’s operation using a personal computer via a LAN.

Projector Toolset

Barco’s Projector Toolset software is a free, userfriendly software package that helps you manage your Barco projectors easily and quickly from one central location, through the network or RS232 connection. Comprising various tools for brightness settings, diagnostics, image adjustment, picture-in-picture and image control, the Projector Toolset is an indispensable tool for efficient visualization management.

The Projector Toolset provides your facility management with an intuitive way to manage an entire fleet of projectors. For example, in college buildings, museums, conference centers or other facilities with a complex visualization network, clicking one button from the comfort of a desktop computer to start up your projector fleet has a huge impact on your time management. For Details, see the website of Barco. URL http://www.barco.com > Projector Toolset

AMX Device Discovery

The projector is monitored and controlled by the controller system of AMX.

This is a technology suggested by AMX to facilitate configuration of the control system of AMX and its target devices. To use this technology, it is necessary to set CONTROL SYSTEM in the NETWORK menu. For details, see the website of AMX. URL http://www.amx.com/

Crestron RoomView Connected™

The projector is monitored and controlled by the controller system and software of Crestron Electronics, Inc.

This is a technology suggested by Crestron Electronics, Inc. to facilitate configuration of the control system of Crestron and its target devices. To use this technology, it is necessary to set CONTROL SYSTEM in the NETWORK menu. For details, see the website of Crestron Electronics, Inc. URL http://www.crestron.com URL http://www.crestron.com/getroomview/

Important:

- When you set CONTROL SYSTEM to CRESTRON in the NETWORK menu, the web control for Crestron is enabled. For such control, Adobe Flash Player should be installed in advance. You can download Adobe Flash Player from the website of Adobe Systems Incorporated.
- When you set CONTROL SYSTEM to CRESTRON in the NETWORK menu, you cannot use the control by Projector Toolset, which is the software supplied with the projector.

PJLink™

This projector supports standard protocol PJLink™ for projector control and you can control and monitor projector’s operations using the same application among projectors of different models and different manufacturers.

About PJLink™

- To use PJLink™ function, the PJLink™ application software is required.
- To use this function, set the network certification properly according to the setting of the network application to be used.
- For the specifications of PJLink™, access to the Web site of Japan Business Machine and Information System Industries Association (JBMIA). (http://pjlink.jbmia.or.jp/english)
- This projector is fully compliant to the specifications of JBMIA PJLink™ Class 1. It supports all the commands defined by PJLink™ Class 1, and the compliance has been verified with the PJLink™ standard specifications Version 1.0.

Important:

- For the commands for PJLink™, see the table on the next page.
- The control may not be performed correctly or the monitoring data may not be obtained correctly in the following conditions:
  - During standby
  - During zoom/focus adjustment
  - During lens shift adjustment
  - During input source switching
  - During auto position execution
  - During BLANK
  - During command processing
  - Before the splash screen disappears after the power is turned on.
- During zoom/focus adjustment, lens shift adjustment, BLANK, etc., it may take approx. 5 seconds to receive a response to a command.
- Use 1 controller to control/monitor 1 projector.
- For how to control/monitor using PJLink™, see the operation manual of the PJLink™ application you use.
- When you monitor the projector's operating state using this function by issuing inquiry commands successively, issue an inquiry command after receiving the response to the previous inquiry command from the projector.

Connection

When STANDBY MODE of the INSTALLATION 1 menu of the projector is set to LOW, the network function is disabled. To enable the network function, set STANDBY MODE to STANDARD.

Configure the initial network settings first.

You can configure the initial settings using the projector menu.

PJLink™ supported commands

The table below shows commands to control the projector using the PJLink™ protocol.

Command	**Description**	**Remark (Parameter)**
POWR	Power control	0 = Standby 1 = Power on
POWR?	Inquiry about the power state	0 = Standby 1 = Power on 2 = Cooling down 3 = Warming up
INPT	Input switching	11 = COMPUTER1 12 = COMPUTER2 21 = VIDEO 22 = S-VIDEO 31 = HDMI 32 = DVI 33 = SDI (only PHWU-81B only)
INPT?	Inquiry about input switching	
AVMT	Mute control	30 = Video mute disable 31 = Video mute enable
AVMT?	Inquiry about the mute state	
ERST?	Inquiry about the error state	1st byte: Fan error, 0 or 2 2nd byte: Lamp error, 0 to 2 3rd byte: Temperature error, 0 or 2 4th byte: Cover open error, 0 or 2 5th byte: Filter error, 0 or 2 6th byte: Other error, 0 or 2 0 to 2 mean as follows: 0 = No error detected, 1 = Warning, 2 = Error

Command	Description	Remark (Parameter)
LAMP?	Inquiry about the lamp state	1st value (1 to 5 digits): Cumulative LAMP 1 operating time (This item shows a lamp operating time (hour) calculated based on that LAMP MODE is STANDARD.) 2nd value: 0 = Lamp off, 1 = Lamp on 3rd value (1 to 5 digits): Cumulative LAMP 2 operating time (This item shows a lamp operating time (hour) calculated based on that LAMP MODE is STANDARD.) 4th value: 0 = Lamp off, 1 = Lamp on
INST?	Inquiry about the available inputs	The following value is returned. “11 12 21 22 31 32 33”
NAME?	Inquiry about the projector name	The projector name set on the NETWORK menu is returned.
INF1?	Inquiry about the manufacturer name	“BARCO” is returned.
INF2?	Inquiry about the model name	“PHWU-81B”, “PHWX-81B”, or “PHXG-91B” is returned.
INF0?	Inquiry about other information	No other information is available. No parameter is returned.
CLSS?	Inquiry about the class information	“1” is returned.

This projector is fully compliant to the specifications of JBMIA PJLink™ Class 1. It supports all the commands defined by PJLink™ Class 1, and the compliance has been verified with the PJLink™ standard specifications Version 1.0.

9.5 Monitoring and control using SERIAL terminal

Overview

Using the SERIAL terminal, you can monitor and control multiple projectors collectively or individually.

For details, contact your dealer.

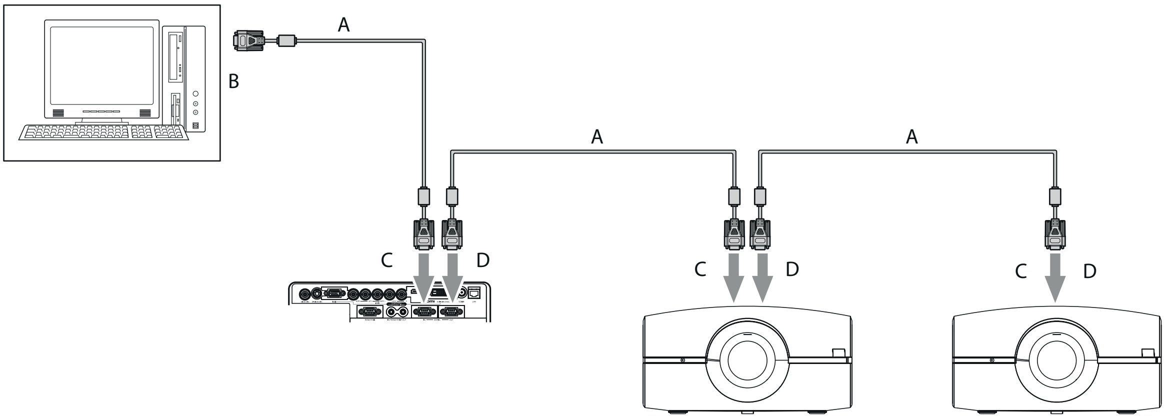


Image 9-7
A RS-232C cable (option)
B To RS-232C terminal
C To SERIAL IN
D To SERIAL OUT

See also the instruction manuals of the devices to be connected.

Connection

Make sure that the power supplies of the projector and the computer are off.

1. Connect one end of a commercially available RS-232C cable to the SERIAL IN terminal on the projector to be connected to the computer.
2. Connect the other end of the RS-232C cable to the serial port on the computer.
3. Connect one end of an RS-232C cable to the SERIAL OUT terminal on the projector that is connected to the computer.
4. Connect the other end of the RS-232C cable to the SERIAL IN terminal on the second projector.

For the connection of the second and later projectors, connect their SERIAL OUT terminals and the SERIAL IN terminals using RS-232C cables.

Important:

In a system using a serial divider, don’t connect the projectors as above.

To monitor and control the projectors collectively or individually, it is necessary to assign GROUP IDs to them.

Setting GROUP IDs

By dividing the projectors into groups, you can monitor and control them collectively by groups. GROUP IDs should be A to Z. You can create up to 26 groups.

→ The default GROUP ID is A.

1. Display the *FEATURE* menu.
2. Select *GROUP ID* by pressing the ▲ or ▼ key.
3. Set the *GROUP ID* by pressing the ◄ or ► key.

Important:

- When you want to monitor and control the projectors by groups, set a different GROUP ID.
- For details, contact your dealer.

9.6 Control by a control panel, etc.

Overview

When installing the projector in a place where the remote control signals cannot reach the projector, you can control the projector using a control panel or other device connected to the REMOTE 1 IN terminal.

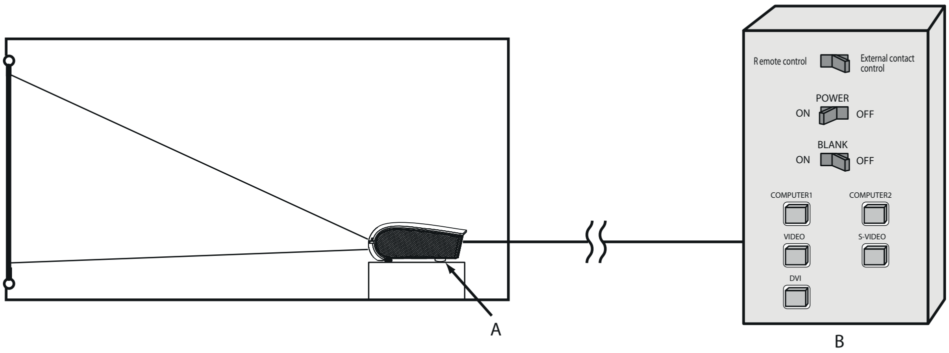


Image 9-8
A Projector
B Control panel

Controllable functions

- Switching between remote control and external control
- Switching input signals
- Power-on and power-off
- BLANK-on and BLANK-off

Important:

To control the projector using a control panel, set STANDBY MODE in the INSTALLATION 1 menu to STANDARD. When it is LOW, you cannot control the projector.

Connections

Make sure that the power supplies of the projector and control panel are off.

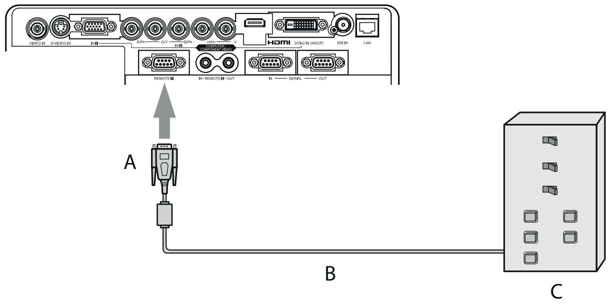


Image 9-9
A To REMOTE 1 IN
B RS-232C cable (option)
C Control panel

1. Connect one end of an RS-232C cable to the REMOTE 1 IN terminal on the projector.
2. Connect the other end of the RS-232C cable to the control panel.

Pin functions (defaults)

Connect the other end of the RS-232C cable to the control panel.

Pin No.	Signal	Open (H)	Short (L)
1	GND	-	GND
2	POWER	OFF	ON
3	Input	-	COMPUTER1
4	Input	-	COMPUTER2
5	Input	-	VIDEO
6	Input	-	S-VIDEO
7	Input	-	DVI
8	BLANK	OFF	ON
9	ON/OFF	Valid (Remote control)	Invalid (External contact control)

→ You can change the functions of PIN 2 to PIN 8 using REMOTE 1 MODE in the INSTALLATION 2 menu.

Important:

To reset the pin functions to the defaults, set REMOTE 1 MODE in the INSTALLATION 2 to RESET.

Contact control

By short-circuiting Pin No. 1 and Pin No. 9, you can control the projector using a control panel or other device.

When you short-circuit Pin No. 1 and Pin No. 9, the following functions cannot be used:

- POWER and BLANK of the remote control and the projector
- RS-232C commands and network functions corresponding to the above-mentioned functions
- REMOTE 1 MODE, AUTO POWER ON and AUTO POWER OFF in the INSTALLATION 2 menu.
- STANDBY MODE in the INSTALLATION 1 menu.

Input switching control

By short-circuiting any of Pin No. 3 to Pin No. 7, you can switch the input using a control panel or other device.

When short-circuiting any of Pin No. 3 to Pin No. 7, you cannot use the following functions.

- POWER, BLANK, COMPUTER 1, COMPUTER 2, VIDEO, S-VIDEO, DVI, HDMI, and SDI (for PHWU-81B only) of the remote control and the projector
- RS-232C commands and network functions corresponding to the above-mentioned functions

POWER control

By short-circuiting or open-circuiting Pin No. 2, you can turn on or off the power using a control panel or other device.

BLANK control

By short-circuiting or open-circuiting Pin No. 8, you can turn on or off the BLANK function using a control panel or other device.

10. LAMP REPLACEMENT

10.1 Lamp replacement warnings

Warnings

- Be careful not to drop the lamp fixing screws into the inside of the projector. Don't put a metal piece or flammable object into the projector. Using the projector with any foreign object present inside may result in electric shock or fire. When you can't remove the foreign object from the inside, contact your dealer for removal.
- Do not touch the lamp with bare hands or give a shock to the lamp. Attach the lamp properly. Improper handling may cause explosion.
- Be sure to install the lamp securely. When the lamp isn't installed properly, it won't illuminate. Improper installation may also result in fire.
- Don't shake the removed lamp or don't lift it above your face. You may be injured in your eye by flying or falling glass fragments.
- Don't replace the lamp immediately after use because the lamp cover is very hot. You may get burned. Turn off the power using the POWER key. After the lamp goes out, wait about 2 minutes until the intake and exhaust fans for cooling the lamp stop rotating. Then unplug the power cord, and wait at least 1 hour to allow the lamp to cool down enough to the touch.

10.2 Interval of lamp replacement

About the lamp

This projector is equipped with 2 lamps to project images. This lamp is a consumable. It may burn out or its brightness may decrease during use. In such cases, replace the lamp with a new one as soon as possible. Be sure to replace the lamp with a new lamp separately sold that is exclusive to this projector. Contact your dealer for purchase of the lamp.

Spare lamp: H LAMP 350W

About lamp replacement interval

The recommended interval of lamp replacement is about 4000 hours[1][2]of consecutive use. Such interval differs depending on the operating environment and may be shorter than 4000 hours[1][2]. Decrease in luminescence and/or color brightness indicates that the lamp needs to be replaced. When the lamp operation time exceeds 3000 hours[1], the lamp replacement message will appear on the screen for 1 minute everytime the lamp is turned on. When the lamp has been used for about 3800 hours[1], the replacement message (IT'S TIME FOR LAMP * REPLACEMENT) will appear on the screen for 1 minute every 20 hours[1] thereafter. When the lamp operation time exceeds 4000 hours[1][2], the projector automatically shuts off.

Caution

- Don't remove the lamp for any purpose other than replacement. Unnecessary removal of the lamp may result in a breakdown.
- This projector uses a high-pressure mercury lamp as the light source. The high-pressure mercury lamp may explode or fail to illuminate permanently because of an impact, scratch, or deterioration through use. The period of time until explosion or permanent failure to illuminate varies considerably from lamp to lamp, depending on operation conditions. Therefore, the lamp may explode soon after the start of use.
- The possibility of explosion of the lamp increases if you use it beyond its replacement period. When the instruction of lamp replacement appears, replace it with a new one immediately even if the lamp is still lighting normally.
- When the high-pressure mercury lamp explodes, glass fragments will scatter inside or outside the lamp box and the gas charged inside the lamp will diffuse inside or outside the projector. The gas inside the lamp contains mercury. Be careful not to breathe it or avoid it from entering your eye or mouth. If you should breathe it or if it should enter your eye or mouth, see a doctor immediately.
- In the event that the high-pressure mercury lamp exploded, glass fragments may have been scattered inside the projector. Ask your dealer to replace the lamp and to inspect the inside of the projector. When you clean or replace the lamp by yourself, be sure to hold the handle of the lamp. You may get injured by glass fragments.
- When removing the lamp from the ceiling-mounted projector, use the lamp replacement tray packed with the projector or option lamp to prevent glass fragments from scattering.
- Be sure to use the lamp exclusive to this projector, H LAMP 350W. Use of other lamps may cause a failure of the projector.

Before replacing the lamp

Check which lamp is to be replaced using the INFO menu in the OSD Lite menu.

---

[1] Duration when LAMP MODE of the INSTALLATION 1 menu is set to LOW. When it is set to STANDARD, this duration will be shorted.

[2] When LAMP MODE is set to STANDARD, this duration will be shorted to 2000 hours.

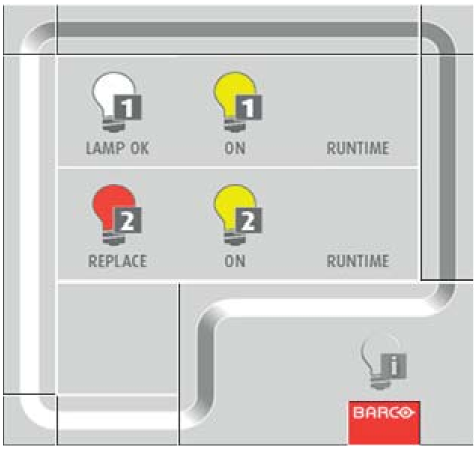


Image 10-1

10.3 Lamp replacement

CAUTION: Only authorized service personnel are allowed to remove the covers.

How to replace

1. Unplug the power cord from the outlet or appliance inlet.
2. Loosen two screws (a) on the rear and two screws (b) on the side that are securing the side cover (c) using a Phillips screwdriver.

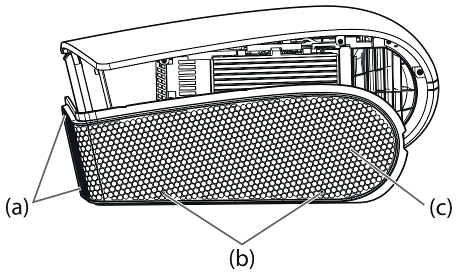


Image 10-2

3. Slide and remove the side cover towards the rear.

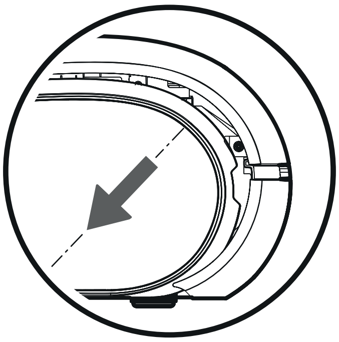


Image 10-3

4. Loosen two screws (d) that are securing the lamp cover using a Phillips screwdriver and remove the lamp cover (e) from the projector.

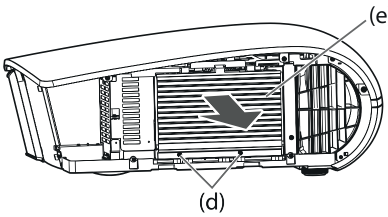


Image 10-4

5. Loosen two screws (f) that are securing the lamp box to be removed using a Phillips screwdriver.

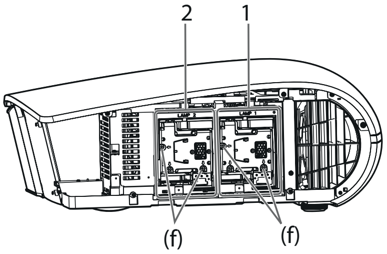


Image 10-5

6. Pull the handle.
7. Pull out the lamp box by the handle while holding the projector.

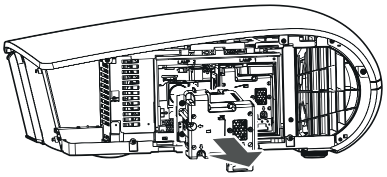


Image 10-6

- Pull the lamp box out of the projector slowly. When the lamp is broken, glass fragments may be scattering by quickly pulling out the lamp box.
- Do not spill liquid on the removed lamp box or do not place it near any flammable object or where children can reach to prevent injury or fire.

8. Load a new lamp box securely into the projector in the right orientation.

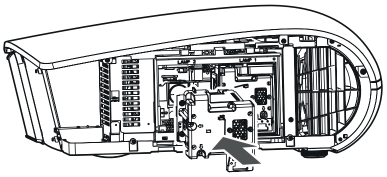


Image 10-7

9. Put the handle back to the original position.
   Note: *Make sure that the handle is locked.*

10. Tighten two screws (f) of the new lamp box tightly using a Phillips screwdriver.

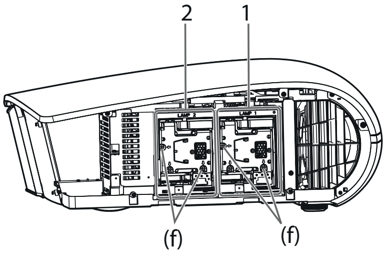


Image 10-8

Note: *Make sure that the screws are tightened firmly.*

11. Insert the lamp cover (e) into the projector and tighten two screws (d) on the lamp cover firmly using a Phillips screwdriver.

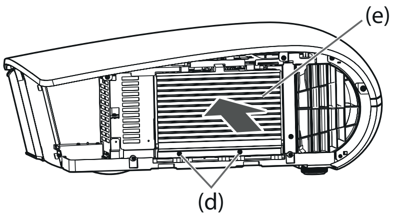


Image 10-9

Note: *You cannot turn on the projector without attaching the lamp cover.*

12. Insert the side cover (c) into the projector and tighten two screws (a) on the rear and two screws (b) on the side of the side cover using a Phillips screwdriver.

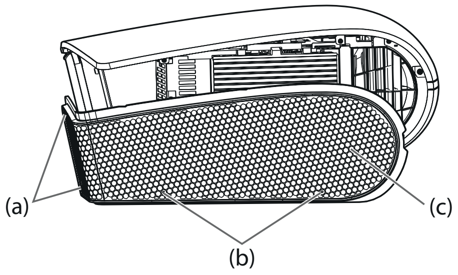


Image 10-10

10.4 Reset of the lamp operation time

What can be done?

You can reset the lamp operation time of the newly installed lamp using the menu.

How to reset

1. Plug the power cord into the wall outlet.
2. Press the **POWER** key.
3. Display the *FEATURE* menu in the *ADVANCED* menu.
4. Select *ADVANCED MENU* by pressing the ▲ or ▼ key.

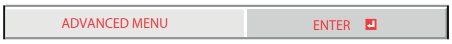


Image 10-11

5. Press the **ENTER** key.
6. Select *LAMP 1 TIME RESET* or *LAMP 2 TIME RESET* by pressing the ▲ or ▼ key.

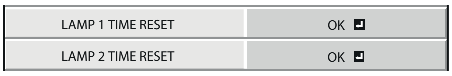
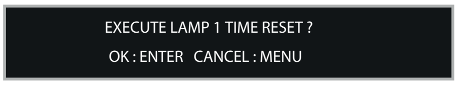


Image 10-12

7. Press the **ENTER** key.

   The confirmation dialog appears.



EXECUTE LAMP 1 TIME RESET ?

OK : ENTER CANCEL : MENU

Image 10-13

8. Reset by pressing the **ENTER** key.

   When the lamp operating time is not reset, press the **MENU** key.

Important

- When the operation times of both lamps have exceeded 4000 hours[3], you can operate the projector only for 3 minutes after turning on the power. During this time, carry out steps 15 to 20 to reset the lamp operation times.
- The projector doesn't turn on if the lamp cover isn't attached securely.
- Be sure to reset the lamp operation time whenever you replace the lamp.
- Do not reset the lamp operation time unless you replace the lamp.
- The lamp is fragile. If it is broken, be careful not to cut yourself with glass fragments.

CAUTION: This projector uses a lamp that contains mercury. Disposal of the lamp or the projector with the lamp may be regulated due to environmental considerations. For disposal or recycling information, please contact your local authorities or the Electronic Industries Alliance: www.eiae.org. (For the U.S. only.)

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[3] When LAMP MODE is set to STANDARD, this duration will be shorted to 2000 hours.

11. MAINTENANCE

WARNING: Do not use flammable solvents (benzene, thinner, etc.) and flammable aerosols when cleaning the projector body and lens. Flammable substances may ignite causing fire or breakdown while the lamp is illuminating.

CAUTION: Be sure to turn off the lamp and unplug the power cord from the wall outlet before you perform any maintenance on the projector.

Ask your dealer for annual cleaning of the inside of the projector. If you continue to use the projector with dust inside, it may result in fire or malfunction.

Do not put any foreign object into the filter unit. It may cause malfunction.

11.1 Cleaning of the projector and the vents

About the cleaning

Use a soft cloth to clean the projector and the vents. When the vents become dirty, wipe them with a soft cloth dampened with diluted mild detergent, and then wipe them with a dry cloth.

Clean the inside of the side and rear covers frequently as dust is apt to be collected.

To protect the surface of the projector from fading or deteriorating:

- Do not spray insecticide on or inside the projector.
- Do not use benzine or thinner to clean it.
- Do not let rubber or plastic materials contact with projector.

11.2 Cleaning of the lens

About cleaning the lens

Use a standard lens-cleaning brush or a piece of lens tissue dampened with lens cleaning fluid. The lens surface is fragile. Use only recommended, nonabrasive lens-cleaning materials. Do not touch the lens with your fingers.

11.3 Automatic cleaning filter

About cleaning filter

This projector is equipped with an automatic cleaning filter. The burdensome filter cleaning is automatically carried out.

- cleaned after the designated time elapses.
- When the cumulative operation time since the last cleaning of the automatic cleaning filter exceeds the designated time, the filter is cleaned automatically after you turn off the projector by pressing the POWER key.

Important:

When the cumulative operation time has exceeded the designated time and you run the projector continuously for 24 hours after turning on the power, the automatic cleaning filter works while the projector is operating.

11.3.1 Setting the cleaning interval

What can be done?

You can set the cleaning interval of the automatic cleaning filter using the menu.

How to set

1. Display the *INSTALLATION 2* menu in the *ADVANCED* menu.
2. Select *FILTER MENU* by pressing the ▲ or ▼ key.

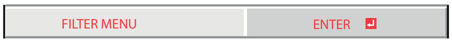


Image 11-1

3. Press the **ENTER** key.
4. Select *CLEANUP PERIOD* by pressing the ▲ or ▼key.

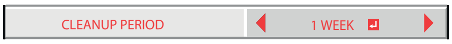

CLEANUP PERIOD ◄ 1 WEEK ↵ ►

Image 11-2

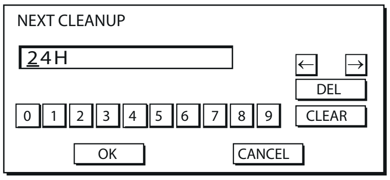
5. Select *24H* ↵ or *1 WEEK* ↵ by pressing the ◄ or ► key.

24H ↵	The filter is cleaned about every 24 hours.
1 WEEK ↵	The filter is cleaned about every 168 hours.

6. Press the **ENTER** key.

   When you select *24H* ↵ or *1 WEEK* ↵ , the box to set the cleaning interval is displayed.

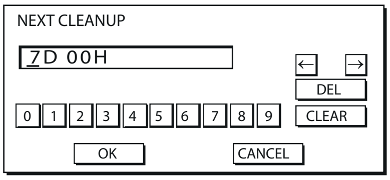
   24H ↵


NEXT CLEANUP

24H

Image 11-3

1 WEEK ↵


NEXT CLEANUP

7D 00H

Image 11-4

7. Move the key cursor using the direction keys to select the number you want to enter and then press the ENTER key.

   Maximum interval

24H ↵	24H (about 24 hours)
1 WEEK↵	7D 00H (about 168 hours)
← key	Shifting the position of enter cursor to the left for each character.
→ key	Shifting the position of enter cursor to the right for each character.
DEL key	Deleting the character in the position of enter cursor for each character.
CLEAR key	Deleting all the entered characters.

When the value you entered meets the following conditions, an error dialog box is displayed at the screen center for 3 seconds.

- The value has been cleared by DEL or CLEAR and left blank.
- The value you entered is out of the setting range.

24H ↵	25H or over
1 WEEK↵	7D 01H or over

- The value of each item is out of the setting range.

D	8 or over (1 WEEK ↵ only)
H	7D 01H or over

8. Select *OK* to accept the interval you entered and exit the menu, or select *CANCEL* to exit the menu without saving the setting.

   When you select *OK* or *CANCEL*, the *CLEANUP PERIOD* menu is displayed.

11.3.2 How to clean the automatic cleaning filter

Preparations

Check the amount of dust through the dust check window of the filter cover and clean it, if necessary. Before cleaning the filter, be sure to unplug the power cord from the outlet.

- Wen the dust box of the automatic cleaning filter is filled up with dust, the cleaning ability decreases. If you use the projector in such a state, the filter is covered by the dust and the temperature inside the product abnormally rises, damaging the internal parts and components and affecting the panel's lifetime, resulting in a breakdown.
- When the temperature inside the projector is abnormally high, the projector may automatically turn off and go into the standby mode where the light source lamps are off to protect the internal parts and components.

CAUTION: Only authorized service personnel are allowed to remove the covers.

How to clean

1. Loosen two screws (a) on the rear and two screws (b) on the side that are securing the side cover (c) using a Phillips screwdriver.

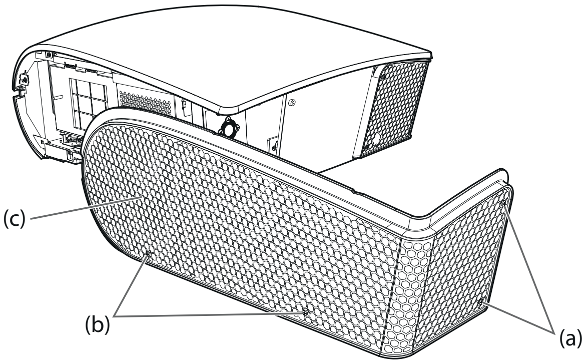


Image 11-5

2. Slide and remove the side cover towards the rear.

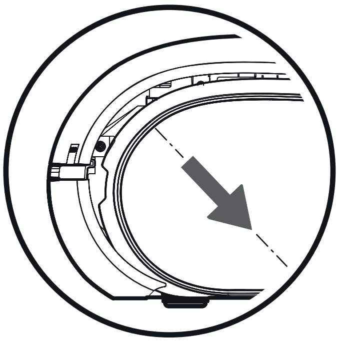


Image 11-6

3. Remove the automatic cleaning filter.

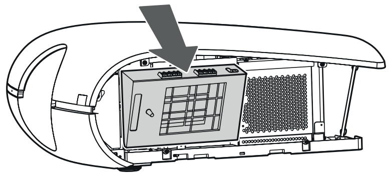


Image 11-7

4. Remove the dust box from the automatic cleaning filter and get rid of the dust from it.

   Suck dirt and dust from the automatic cleaning filter and projector using a vacuum cleaner.

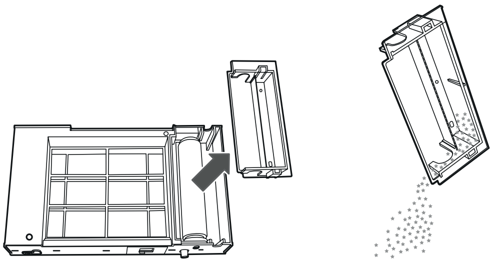


Image 11-8

5. Attach the dust box to the automatic cleaning filter.

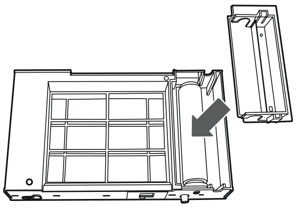


Image 11-9

6. Attach the automatic cleaning filter.

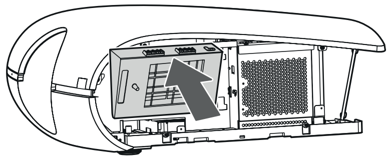


Image 11-10

7. Insert the side cover (c) into the projector and tighten two screws (a) on the rear and two screws (b) on the side of the side cover firmly using a Phillips screwdriver.

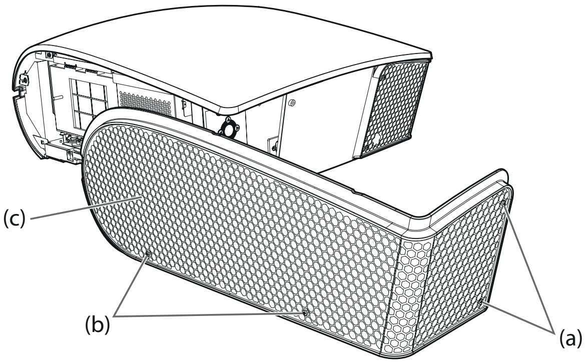


Image 11-11

12. TROUBLESHOOTING

Advise

Before asking for repair of the projector, check the following. If the symptom persists, stop using the projector, be sure to unplug the power plug, and then contact your dealer.

12.1 No image appears on the screen

Overview

Problem	**Solution**
Power can not be turned on.	Check whether the STATUS Led is on or off and how it is lightning.
No image appears on the screen.	• Press any key to cancel BLANK • Check that the lens cap is removed. • It may take about 2 minutes for the lamp to light up. • The lamp fails to light up on rare occasions. In such a case, wait for a few minutes and then try again. • If the projector was turned off before the lamp was cooled down sufficiently last time, the fan may start rotating and the POWER key may not work after the power cord is plugged. After the fan stops rotating, press the POWER key to turn back on the STATUS Led. • Set SCART INPUT in the FEATURE menu to OFF. • Check that the intake vent is clean. • Check that the cables connected to the external devices are not broken. • When an extension cable is being used, replace it with the supplied cable for check. When images are displayed correctly, add an RGB signal amplifier to the extension cable.
Power turns off.	• This problem may occur when the intake vent and/or exhaust vents are blocked. → Remove the objects blocking the intake vent and/or exhaust vents and then carry out the following procedure. a) Wait for the intake fan and/or exhaust fan to stop. b) Unplug the power cord from the wall outlet. c) Wait about 10 minutes. d) Plug the power cord into a wall outlet. e) Press the POWER key. • Check that AUTO POWER OFF has been set to OFF. • If the lamp has deteriorated, it may go out after a while it illuminates.
The screen for entering the password appears.	PASSWORD FUNCTION in the FEATURE menu has been set to DISPLAY INPUT ↵ to enable the password lock. → Enter the password or contact the person in charge of management of the projector.
Splash image is kept displayed.	• Turn on the power of the connected device, or check whether there is something wrong with the connected device. • Checke whether the external device output signals. (Check this especially when the external device is a notebook computer.) • Check that the cable connected to the external device is not defective. • Check that the projector is connected to the external device using the correct terminals. • Check that the connected device is correctly selected as the input source. • When an extension cord is being used, replace it with the supplied cable and check whether images are projected correctly. If images are projected correctly, use an RGB signal amplifier along with the extension cord.

12.2 Images are not displayed correctly

Overview

Problem	**Solution**
Projected images are shaking. Projected images are displaced. The edge of the projected images is not displayed.	• Check that the cable connected to the external device isn't intermittent. • Connect the cable's plug with the external device's connector firmly. • Project an image containing many characters such as a help menu and execute AUTO POSITION. • Some computers output out-of-spec signals on rare occasion. Adjust the SIGNAL menu. • Check whether there is a wind that blows the exhausted air from the projector to the direction of the projection lens.
Projected images are distorted.	Adjust the projector and the screen so that they are perpendicular to each other.
Projected images are dark.	• Adjust BRIGHTNESS and CONTRAST in the IMAGE menu. • Replace the lamp. • Decrease the temperature when the ambient temperature is high and the warning is displayed.
Projected images are blurred.	• Adjust the focus. • Clean the lens. • Adjust FINE SYNC. in the SIGNAL menu to eliminate flicker. • Adjust TRACKING and FINE SYNC. in the SIGNAL menu. • Adjust BRIGHTNESS and CONTRAST in the IMAGE menu. • Adjust the projector and the screen so that they are perpendicular to each other.
White dots are seen on projected images. Black dots are seen on projected images.	This symptom is normal for a DLP® projector and is not a malfunction. (A very small number of pixels may stay lit or out, but such symptom is not a malfunction. Pixels of 99.99% or more are effective.)
Rainbow effect is seen on projected images.	This is due to color breaking noise that occurs in a DLP® system and is not a malfunction.
Fine streaks are seen on projected images.	• This is due to interference with the screen surface and is not a malfunction. Replace the screen or displace the focus a little. • Vertical or horizontal streak noise may appear on the projected image, depending on the type of the DVD player or game console you use. In such a case, you can reduce such streak noise by enabling the LPF.
Projected images become wavy.	• Connect the plugs of the cables to external devices securely. • Keep the projector away from devices that emit interfering radio waves. • When the keystone adjustment is carried out, the image may not be displayed correctly depending on the type of input signal. This isn't a product malfunction. In this case, readjust the keystone so that the amount of keystone correction is as small as possible.
Hue is not appropriate.	• If RGB/YCbCr output setting on the external device does not match with COMPUTER INPUT setting in the SIGNAL menu on the projector, the entire screen may become reddish or greenish. • If the setting of COMPUTER INPUT in the SIGNAL menu is inconsistent with the RGB/YCbCr output setting of the external device even when the input source is other than COMPUTER (for example, when the input source is HDMI), the entire image appears reddish or greenish. → Check that COMPUTER INPUT in the SIGNAL menu is set correctly. • Check that the cables connected to the external devices are not broken.
Tint in projected images is incorrect.	• Check that COMPUTER INPUT in the SIGNAL menu is correctly set. • Check that the cable connected to the external device isn't broken.
Different color tint.	• When comparing images projected by two projectors, tints in the displayed images may be different because of variation between their optical components. This is not a malfunction. • When comparing the image projected by this projector with those displayed on the television or PC monitor, tints in the displayed images may be different because of difference in the range of color reproducibility. This is not a malfunction.

Problem	Solution
Only the motion areas in the images supplied from the computer aren't displayed.	This is caused by the computer being used. Contact the manufacturer of your computer.
Projected images are obscured.	• Match the output resolution of your computer with the resolution of the projector. For the method to change the output resolution of the computer, contact the manufacturer of your computer. • Some images and texts appear obscured during the keystone adjustment. In such cases, use the projector without applying the keystone adjustment. • When SUPER RESOLUTION is ON, the displayed image may be obscured. Set it to OFF.
Noise appears around the image.	In some images such as DVD, noise may appear around the recorded image. In this case, decrease the setting value of OVER SCAN in the SIGNAL menu or adjust the setting value of SHUTTER in the USER menu of the SIGNAL menu.
The resolution setting on the computer is different from that displayed in INFORMATION menu on the projector.	• On the computer, display the images containing many characters such as a text document so that the screen becomes bright as much as possible, and then execute AUTO POSITION. • Perform RESOLUTION (MEMORIZE) in the SIGNAL menu. • Depending on the computer, the images may be output in the different resolution from the setting. In such a case, consult the computer manufacturer.
The projected images have blown-out highlights or blocked-up shadows.	• Adjust the input level of ADVANCED menu in the IMAGE menu • Set COLOR ENHANCER in the IMAGE menu to the setting such as STANDARD and sRGB.
Images of WXGA signal are not displayed correctly.	Make adjustment according to “How to adjust the computer image”

12.3 Other problems

Overview

Problem	Solution
The exhaust vents emit warm air.	This air comes out after cooling the inside of the projector. You may feel hot, but this is not a malfunction.
The menu can't be used.	• The microcomputers inside the projector may be wrongly operating because of noise. → Press the POWER key to turn off the lamp, wait for about 2 minutes and unplug the power cord from the wall outlet. Wait about 10 minutes, plug the power cord in, and try again. • You cannot select (or set) grayed-out items. Whether items can be selected or not depends on the presence of an input signal at the time when the menu is displayed, the type of such input signal, and other conditions.
“HIGH TEMP WARNING” is displayed.	• This indication appears when the ambient temperature rises high. When the ambient temperature stays high, the lamp goes out. → Eliminate any causes of the rise in the ambient temperature. • This indication appears when the intake or exhaust vents are blocked. When they are kept blocked, the lamp goes out. → Remove the objects blocking the intake or exhaust vents.
The mark Ø appears.	This mark appears when ineffective operation is carried out. This isn't a product malfunction.
This mark appears when ineffective operation is carried out. This isn't a product malfunction. The remote control doesn't function easily or at all.	• Check that the batteries are loaded in the remote control or the batteries are not weak. • Check that the remote control sensor isn't exposed to direct sunlight or fluorescent light. • Use the remote control within its operation range. • Use the remote control at least 10 cm away from the projector. • Check that the projector isn't controlled by a control panel or other device that is connected to the REMOTE 1 IN terminal. • Check that the REMOTE 2 IN and OUT terminals are not used.

Problem	Solution
The keys on the projector (except for the POWER key) don't function.	• PASSWORD FUNCTION in the FEATURE menu has been set to MENU ACCESS ↵ to enable the password lock. → Cancel the password lock or contact the person in charge of management of the projector. • Check that the projector isn't controlled by a control panel or other device that is connected to the REMOTE 1 IN terminal.
Abnormal sound is heard.	Because the color wheel spins at a high speed, metallic sounds may be heard in rare occasions. Such symptom is not a malfunction.
FOCUS/ZOOM doesn't work. Lens shift doesn't work.	Check that LENS LOCK in the INSTALLATION 1 menu isn't ON.

If the following problem occurs after the lamp is replaced, check the following first.

Problem	Solution
The projector does not turn on.	Fit the lamp cover securely.
The STATUS Led blinks.	Reset the lamp operating time of the newly installed lamp.

Kensington Lock

This projector has a Kensington Security Standard connector for use with Kensington MicroSaver Security System. Refer to the information that came with the Kensington System for instructions on how to use it to secure the projector. Please contact Kensington Technology Group below.

Kensington Technology Group

2855 Campus Drive

San Mateo, CA 94403, U.S.A.

Phone: +1- (650)572-2700 Fax: +1- (650)572-9675

12.4 Led

Overview

The STATUS Led shows the operation condition of the projector.

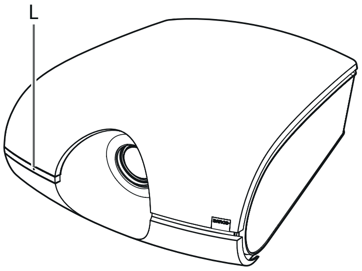


Image 12-1
L Status Led

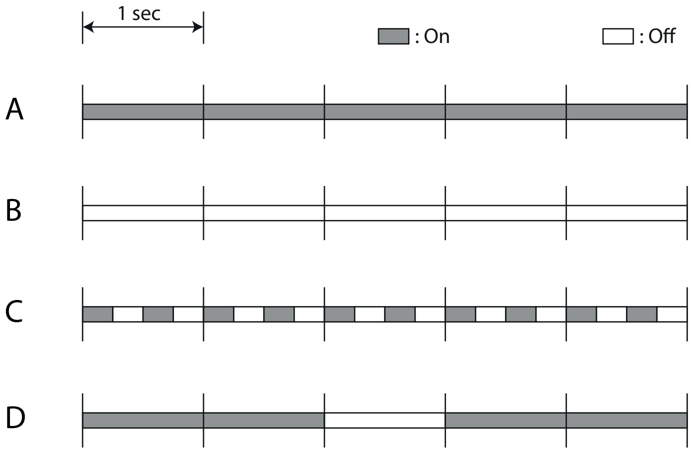


Image 12-2

A Power standby

B The power is on (Normal condition)

C Abnormal

(The lamp replacement message is displayed or the protection circuit is working. Turn the projector off and consult your dealer.)

D

- When the lamp is illuminating, it is in the warmup mode. (You cannot turn off the power.)
- When the lamp is off, it is in the cooling mode. (You cannot turn on the power.)

13. SPECIFICATIONS

13.1 Specifications of PHXG-91B

Overview

Projector type	XGA single-chip DLP projector
Technology	0.70" DMD
Color wheel	4S standard (RGBW)
Resolution	1,024 x 768 XGA
Brightness	8,500 ANSI lumens / 6,200 ANSI lumens (eco-mode) (complies with ISO 21118)
Contrast ratio	2,800:1
Brightness uniformity	70%
Aspect Ratio	4:3
ScenergiX	Yes
Lens type	H lens
Lenses	1.7-2.3:1; 0.8-1.0:1; 1.3-1.8:1; 2.2-2.9:1; 2.9-4.7:1; 4.7-9.0:1
Optical lens shift	Vertical: -0% to +118% / horizontal: -20% to +20%
Color correction	Yes
Lamps	2 x 350W AC lamp
Lamp lifetime	Up to 2,000 hours (full power) / Up to 4,000 hours (eco mode)
Sealed DLP™ core	Yes
Optical dowser	Yes
Advance Picture in Picture	PIP
Orientation	table - ceiling
WARP	Yes
Integrated web server	Yes
Keystone correction	Yes
Inputs	5 BNC (RGBHV, component), S-VIDEO, D-SUB 15-pin, HDMI, DVI-D (HDCP)
Input Resolutions	up to WUXGA (1,920 x 1,200) 60Hz
Software tools	Projector Toolset
Control	IR, RS232, RJ45
Network connection	10/100 base-T, RJ-45 connection
Power requirements	100-240V / 50-60Hz
Max. power consumption	910W / 690W(eco mode) / 0.3W (standby)
Noise level (typical at 25°C/77°F)	44 dBA (bright mode) / 39 dBA (eco mode)
Operational ambient temperature	5-40°C / 41°-104°F
Operational humidity	30-90%
Dimensions (WxLxH)	510 x 660 x 263 mm
Weight	21kg
Shipping dimensions (WxLxH)	650 x 840 x 415 mm
Shipping Weight from Factory	26.5 kg
Certifications	CB test certificate, US emc, US safety, CE emc and safety, CCC emc and safety
Warranty	3 years standard warranty (contact your local sales rep for details per region)

13.2 Specifications of PHWX-81B

Overview

Projector type	WXGA single-chip DLP projector
Technology	0.65" DMD
Color wheel	4S standard (RGBW)
Resolution	1,280 x 800 WXGA
Brightness	7,300 ANSI lumens / 5,300 ANSI lumens (eco-mode) (compliant with ISO 21118)
Contrast ratio	2,800:1
Brightness uniformity	70%
Aspect Ratio	16:10
ScenergiX	Yes
Lens type	H lens
Lenses	1.7-2.3:1; 0.8-1.0:1; 1.4-1.9:1; 2.3-2.9:1; 2.9-4.8:1; 4.8-9.2:1
Optical lens shift	Vertical: -0% to +134% / horizontal: -20% to +20%
Color correction	Yes
Lamps	2 x 350W AC lamp
Lamp lifetime	Up to 2,000 hours (full power) / Up to 4,000 hours (eco mode)
Sealed DLP™ core	Yes
Optical dowser	Yes
Advance Picture in Picture	Split
Orientation	table - ceiling
WARP	Yes
Integrated web server	Yes
Keystone correction	Yes
Inputs	5 BNC (RGBHV, component), S-VIDEO, D-SUB 15-pin, HDMI, DVI-D (HDCP)
Input Resolutions	up to WUXGA (1,920 x 1,200) 60Hz
Software tools	Projector Toolset
Control	IR, RS232, RJ45
Network connection	10/100 base-T, RJ-45 connection
Power requirements	100-240V / 50-60Hz
Max. power consumption	910W / 690W(eco mode) / 0.3W (standby)
Noise level (typical at 25°C/77°F)	44 dBA (bright mode) / 39 dBA (eco mode)
Operational ambient temperature	5-40°C / 41°-104°F
Operational humidity	30-90%
Dimensions (WxLxH)	510 x 660 x 263 mm
Weight	21kg
Shipping dimensions (WxLxH)	650 x 840 x 415 mm
Shipping Weight from Factory	26.5 kg
Certifications	CB test certificate, US emc, US safety, CE emc and safety, CCC emc and safety
Warranty	3 years standard warranty (warranty and service conditions can differ from region to region. Contact your local sales or service rep for more details)

13.3 Specifications of PHWU-81B

Overview

Projector type	WUXGA single-chip DLP projector
Technology	0.67" DMD
Color wheel	4S standard (RGBW)
Resolution	1,920 x 1,200 WUXGA
Brightness	7,500 ANSI lumens / 5,450 ANSI lumens (eco-mode)(compliant with ISO 21118)
Contrast ratio	2,800:1
Brightness uniformity	70%
Aspect Ratio	16:10
ScenergiX	Yes
Lens type	H lens
Lenses	1.7-2.3:1; 0.8-1.0:1; 1.3-1.8:1; 2.2-2.7:1; 2.8-4.5:1; 4.5-8.7:1
Optical lens shift	Vertical: -0% to +134% / horizontal: -19% to +19%
Color correction	Yes
Lamps	2 x 350W AC lamp
Lamp lifetime	Up to 2,000 hours (full power) / Up to 4,000 hours (eco mode)
Sealed DLP™ core	Yes
Optical dowser	Yes
Advance Picture in Picture	Split
Orientation	table - ceiling
WARP	Yes
Integrated web server	Yes
Keystone correction	Yes
Inputs	5 BNC (RGBHV, component), S-VIDEO, D-SUB 15-pin, HDMI, DVI-D (HDCP), SDI
Input Resolutions	up to WUXGA (1,920 x 1,200) 60Hz
Software tools	Projector Toolset
Control	IR, RS232, RJ45
Network connection	10/100 base-T, RJ-45 connection
Power requirements	100-240V / 50-60Hz
Max. power consumption	910W / 690W(eco mode) / 0.3W (standby)
Noise level (typical at 25°C/77°F)	44 dBA (bright mode)/ 39 dBA (eco mode)
Operational ambient temperature	5-40°C / 41°-104°F
Operational humidity	30-90%
Dimensions (WxLxH)	510 x 660 x 263 mm
Weight	21kg
Shipping dimensions (WxLxH)	650 x 840 x 415 mm
Shipping Weight from Factory	26.5 kg
Certifications	CB test certificate, US emc, US safety, CE emc and safety, CCC emc and safety
Warranty	3 years standard warranty (conditions can differ from region to region. Contact your local sales or service rep for more details)

13.4 Specification of RGB signals in each computer mode of the projector For PHWU-81B

Overview

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)	Native mode (H x V)	Plug and Play[4]		
						COMPUTER/ COMPONENT VIDEO IN-1 terminal	COMPUTER / COMPONENT DVI-D IN (HDCP) terminal	HDMI IN terminal
TV60, 480i (525i)[5][6]	720 x 480	15.73	59.94	1600 x 1200	-			
TV50, 576i (625i)[5][6]	720 x 576	15.63	50.00	1600 x 1200	-			
1080i60 (1125i60)[5]	1920 x 1080	33.75	60.00	1920 x 1080	-		x	x
1080i50 (1125i50)[5]	1920 x 1080	28.13	50.00	1920 x 1080	-		x	x
480p (525p)[5]	720 x 480	31.47	59.94	1600 x 1200	-		x	x
576p (625p)[5]	720 x 576	31.25	50.00	1600 x 1200	-		x	x
720p60 (750p60)[5]	1280 x 720	45.00	60.00	1920 x 1080	-		x	x
720p60 (750p50)[5]	1280 x 720	37.50	50.00	1920 x 1080	-		x	x
1080p60 (1125p60)[5]	1920 x 1080	67.50	60.00	1920 x 1080	-		x	x
1080p50 (1125p50)[5]	1920 x 1080	56.25	50.00 0	1920 x 1080	-		x	x
CGA70	640 x 400	31.47	70.09	1920 x 1200	640 x 400			
CGA84	640 x 400	37.86	84.13	1920 x 1200	640 x 400			
CGA85	640 x 400	37.86	85.08	1920 x 1200	640 x 400			
VGA60	640 x 480	31.47	59.94	1600 x 1200	640 x 480	x	x	x
VGA72	640 x 480	37.86	72.81	1600 x 1200	640 x 480	x		
VGA75	640 x 480	37.50	75.00	1600 x 1200	640 x 480	x		
VGA85	640 x 480	43.27	85.01	1600 x 1200	640 x 480			
SVGA56	800 x 600	35.16	56.25	1600 x 1200	800 x 600	x		
SVGA60	800 x 600	37.88	60.32	1600 x 1200	800 x 600	x	x	x
SVGA72	800 x 600	48.08	72.19	1600 x 1200	800 x 600	x		
SVGA75	800 x 600	46.88	75.00	1600 x 1200	800 x 600	x		
SVGA85	800 x 600	53.67	85.06	1600 x 1200	800 x 600			
SVGA95	800 x 600	59.97	94.89	1600 x 1200	800 x 600			
XGA60	1024 x 768	48.36	60.00	1600 x 1200	1024 x 768	x	x	x
XGA70	1024 x 768	56.48	70.07	1600 x 1200	1024 x 768	x		
XGA75	1024 x 768	60.02	75.03	1600 x 1200	1024 x 768	x		
XGA85	1024 x 768	68.68	85.00	1600 x 1200	1024 x 768			
SXGA70a	1152 x 864	63.85	70.01	1600 x 1200	1152 x 864			
SXGA75a	1152 x 864	67.50	75.00	1600 x 1200	1152 x 864			
SXGA85a	1152 x 864	77.49	85.06	1600 x 1200	1152 x 864			
WXGA60	1280 x 768	47.78	59.87	1920 x 1152	1280 x 768		x	x

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[4] Signals marked with x in the Plug and Play column are described in EDID (extended display identification data) of the projector.a

[5] SPLIT in the INSTALLATION 1 menu doesn't function with these signals.

[6] COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) terminal and HDMI IN terminal aren't supported.

WXGA60a	1280 x 800	49.70	59.81	1920 x 1200	1280 x 800	x	x	x
WXGA60b	1360 x 768	47.71	60.02	1920 x 1085	1360 x 768			
WXGA60c	1366 x 768	47.71	59.79	1920 x 1080	1366 x 768	x	x	x
WXGA+60	1440 x 900	55.94	59.89	1920 x 1200	1440 x 900	x	x	x
WXGA++60	1600 x 900	60.00	60.00	1920 x 1080	1600 x 900			
SXGA60b	1280 x 960	60.00	60.00	1600 x 1200	1280 x 960	x	x	x
SXGA75b	1280 x 960	75.00	75.00	1600 x 1200	1280 x 960			
SXGA85b	1280 x 960	85.94	85.00	1600 x 1200	1280 x 960			
SXGA60	1280 x 1024	63.98	60.02	1500 x 1200	1280 x 1024	x	x	x
SXGA75	1280 x 1024	79.98	75.02	1500 x 1200	1280 x 1024	x		
SXGA85	1280 x 1024	91.15	85.02	1500 x 1200	1280 x 1024			
SXGA+60	1400 x 1050	63.98	60.02	1600 x 1200	1400 x 1050			
	1400 x 1050	65.32	59.98	1600 x 1200	1400 x 1050	x	x	x
SXGA+75	1400 x 1050	82.28	74.87	1600 x 1200	1400 x 1050			
WSXGA+60	1680 x 1050	65.29	59.95	1920 x 1200	1680 x 1050			
MAC13	640 x 480	35.00	66.67	1600 x 1200	640 x 480	x		
MAC16	832 x 624	49.72	74.55 4	1600 x 1200	832 x 62	x		
MAC19	1024 x 768	60.24	75.02	1600 x 1200	1024 x 768			
HP75	1024 x 768	62.94	74.92	1600 x 1200	1024 x 768			
HP72	1280 x 1024	78.13	72.00	1500 x 1200	1280 x 1024			
SUN66a	1152 x 900	61.85	66.00	1536 x 1200	1152 x 900			
SUN76a	1152 x 900	71.81	76.64	1536 x 1200	1152 x 900			
SUN66	1280 x 1024	71.68	66.68	1500 x 1200	1280 x 1024			
SUN76	1280 x 1024	81.13	76.11	1500 x 1200	1280 x 1024			
SGI72	1280 x 1024	76.92	72.30	1500 x 1200	1280 x 1024			
SGI76	1280 x 1024	82.01	76.00	1500 x 1200	1280 x 1024			
UXGA60	1600 x 1200	75.00	60.00	1600 x 1200	1600 x 1200	x	x	x
WUXGA60	1920 x 1200	74.04	59.95	1920 x 1200	1920 x 1200	x	x	x

Signals described in the Signal mode column can be input regardless of the x mark in the Plug and Play column. For signals not marked with x in the Plug and Play column, the resolution may not be supported even when it is supported on the computer.

13.5 Specification of RGB signals in each computer mode of the projector, For PHWX-81B

Overview

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)	Native mode (H x V)	Plug and Play[7]		
						COMPUTER/COMPONENT VIDEO IN-1 terminal	COMPUTER / COMPONENT DVI-D IN (HDCP) terminal	HDMI IN terminal
TV60, 480i (525i)[5][6]	720 x 480	15.73	59.94	1066 x 800	-			
TV50, 576i (625i)[5][6]	720 x 576	15.63	50.00	1066 x 800	-			

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[7] Signals marked with x in the Plug and Play column are described in EDID (extended display identification data) of the projector.a

1080i60 (1125i60)[5]	1920 x 1080	33.75	60.00	1280 x 720	-		x	x
1080i50 (1125i50)[5]	1920 x 1080	28.13	50.00	1280 x 720	-		x	x
480p (525p)[5]	720 x 480	31.47	59.94	1280 x 720	-		x	x
576p (625p)[5]	720 x 576	31.25	50.00	1280 x 720	-		x	x
720p60 (750p60)[5]	1280 x 720	45.00	60.00	1280 x 720	-		x	x
720p60 (750p50)[5]	1280 x 720	37.50	50.00	1280 x 720	-		x	x
1080p60 (1125p60)[5]	1920 x 1080	67.50	60.00	1920 x 1080	-		x	x
1080p50 (1125p50)[5]	1920 x 1080	56.25	50.00 0	1280 x 720	-		x	x
CGA70	640 x 400	31.47	70.09	1280 x 800	640 x 400			
CGA84	640 x 400	37.86	84.13	1280 x 800	640 x 400			
CGA85	640 x 400	37.86	85.08	1280 x 800	640 x 400			
VGA60	640 x 480	31.47	59.94	1066 x 800	640 x 480	x	x	x
VGA72	640 x 480	37.86	72.81	1066 x 800	640 x 480	x		
VGA75	640 x 480	37.50	75.00	1066 x 800	640 x 480	x		
VGA85	640 x 480	43.27	85.01	1066 x 800	640 x 480			
SVGA56	800 x 600	35.16	56.25	1066 x 800	800 x 600	x		
SVGA60	800 x 600	37.88	60.32	1066 x 800	800 x 600	x	x	x
SVGA72	800 x 600	48.08	72.19	1066 x 800	800 x 600	x		
SVGA75	800 x 600	46.88	75.00	1066 x 800	800 x 600	x		
SVGA85	800 x 600	53.67	85.06	1066 x 800	800 x 600			
SVGA95	800 x 600	59.97	94.89	1066 x 800	800 x 600			
XGA60	1024 x 768	48.36	60.00	1066 x 800	1024 x 768	x	x	x
XGA70	1024 x 768	56.48	70.07	1066 x 800	1024 x 768	x		
XGA75	1024 x 768	60.02	75.03	1066 x 800	1024 x 768	x		
XGA85	1024 x 768	68.68	85.00	1066 x 800	1024 x 768			
SXGA70a	1152 x 864	63.85	70.01	1066 x 800	1152 x 800			
SXGA75a	1152 x 864	67.50	75.00	1066 x 800	1152 x 800			
SXGA85a	1152 x 864	77.49	85.06	1066 x 800	1152 x 800			
WXGA60	1280 x 768	47.78	59.87	1066 x 800	1280 x 768		x	x
WXGA60a	1280 x 800	49.70	59.81	1066 x 800	1280 x 800	x	x	x
WXGA60b	1360 x 768	47.71	60.02	1280 x 723	1280 x 768			
WXGA60c	1366 x 768	47.71	59.79	1280 x 720	1280 x 768	x	x	x
WXGA+60	1440 x 900	55.94	59.89	1280 x 800	1280 x 800	x	x	x
WXGA++60	1600 x 900	60.00	60.00	1280 x 720	1280 x 800			
SXGA60b	1280 x 960	60.00	60.00	1066 x 800	1280 x 800	x	x	x
SXGA75b	1280 x 960	75.00	75.00	1066 x 800	1280 x 800			
SXGA85b	1280 x 960	85.94	85.00	1066 x 800	1280 x 800			
SXGA60	1280 x 1024	63.98	60.02	1000 x 800	1280 x 800	x	x	x
SXGA75	1280 x 1024	79.98	75.02	1000 x 800	1280 x 800	x		
SXGA85	1280 x 1024	91.15	85.02	1000 x 800	1280 x 800			
SXGA+60	1400 x 1050	63.98	60.02	1066 x 800	1280 x 800			
	1400 x 1050	65.32	59.98	1066 x 800	1280 x 800	x	x	x
SXGA+75	1400 x 1050	82.28	74.87	1066 x 800	1280 x 800			
WSXGA+60	1680 x 1050	65.29	59.95	1066 x 800	1280 x 800			

MAC13	640 x 480	35.00	66.67	1066 x 800	640 x 480	x		
MAC16	832 x 624	49.72	74.55 4	1066 x 800	832 x 62	x		
MAC19	1024 x 768	60.24	75.02	1066 x 800	1024 x 768			
HP75	1024 x 768	62.94	74.92	1066 x 800	1024 x 768			
HP72	1280 x 1024	78.13	72.00	1000 x 800	1280 x 1024			
SUN66a	1152 x 900	61.85	66.00	1024 x 800	1152 x 800			
SUN76a	1152 x 900	71.81	76.64	1024 x 800	1152 x 800			
SUN66	1280 x 1024	71.68	66.68	1000 x 800	1280 x 800			
SUN76	1280 x 1024	81.13	76.11	1000 x 800	1280 x 800			
SGI72	1280 x 1024	76.92	72.30	1000 x 800	1280 x 800			
SGI76	1280 x 1024	82.01	76.00	1000 x 800	1280 x 800			
UXGA60	1600 x 1200	75.00	60.00	1066 x 800	1280 x 800	x	x	x
WUXGA60	1920 x 1200	74.04	59.95	1280 x 800	1280 x 800			

Signals described in the Signal mode column can be input regardless of the x mark in the Plug and Play column. For signals not marked with x in the Plug and Play column, the resolution may not be supported even when it is supported on the computer.

13.6 Specification of RGB signals in each computer mode of the projector, For PHXG-91B

Overview

Signal mode	Resolution (H x V)	Horizontal frequency (kHz)	Vertical frequency (Hz)	Normal mode (H x V)	Plug and Play[8]		
					COMPUTER/ COMPONENT VIDEO IN-1 terminal	COMPUTER / COMPONENT DVI-D IN (HDCP) terminal	HDMI IN terminal
TV60, 480i (525i)[5,6]	720 x 480	15.73	59.94	1024 x 768			
TV50, 576i (625i)[5,6]	720 x 576	15.63	50.00	1024 x 768			
1080i60 (1125i60)[5]	1920 x 1080	33.75	60.00	1024 x 576		x	x
1080i50 (1125i50)[5]	1920 x 1080	28.13	50.00	1024 x 576		x	x
480p (525p)[5]	720 x 480	31.47	59.94	1024 x 768		x	x
576p (625p)[5]	720 x 576	31.25	50.00	1024 x 768		x	x
720p60 (750p60)[5]	1280 x 720	45.00	60.00	1024 x 576		x	x
720p60 (750p50)[5]	1280 x 720	37.50	50.00	1024 x 576		x	x
1080p60 (1125p60)[5]	1920 x 1080	67.50	60.00	1024 x 576		x	x
1080p50 (1125p50)[5]	1920 x 1080	56.25	50.00 0	1024 x 576		x	x
CGA70	640 x 400	31.47	70.09	1024 x 640			
CGA84	640 x 400	37.86	84.13	1024 x 640			
CGA85	640 x 400	37.86	85.08	1024 x 640			
VGA60	640 x 480	31.47	59.94	1024 x 768	x	x	x
VGA72	640 x 480	37.86	72.81	1024 x 768	x		

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[8] Signals marked with x in the Plug and Play column are described in EDID (extended display identification data) of the projector.a

VGA75	640 x 480	37.50	75.00	1024 x 768	x		
VGA85	640 x 480	43.27	85.01	1024 x 768			
SVGA56	800 x 600	35.16	56.25	1024 x 768	x		
SVGA60	800 x 600	37.88	60.32	1024 x 768	x	x	x
SVGA72	800 x 600	48.08	72.19	1024 x 768	x		
SVGA75	800 x 600	46.88	75.00	1024 x 768	x		
SVGA85	800 x 600	53.67	85.06	1024 x 768			
SVGA95	800 x 600	59.97	94.89	1024 x 768			
XGA60	1024 x 768	48.36	60.00	1024 x 768	x	x	x
XGA70	1024 x 768	56.48	70.07	1024 x 768	x		
XGA75	1024 x 768	60.02	75.03	1024 x 768	x		
XGA85	1024 x 768	68.68	85.00	1024 x 768			
SXGA70a	1152 x 864	63.85	70.01	1024 x 768			
SXGA75a	1152 x 864	67.50	75.00	1024 x 768			
SXGA85a	1152 x 864	77.49	85.06	1024 x 768			
WXGA60	1280 x 768	47.78	59.87	1024 x 615		x	x
WXGA60a	1280 x 800	49.70	59.81	1024 x 640	x	x	x
WXGA60b	1360 x 768	47.71	60.02	1024 x 579			
WXGA60c	1366 x 768	47.71	59.79	1024 x 576	x	x	x
WXGA+60	1440 x 900	55.94	59.89	1024 x 640	x	x	x
WXGA++60	1600 x 900	60.00	60.00	1024 x 576			
SXGA60b	1280 x 960	60.00	60.00	1024 x 768	x	x	x
SXGA75b	1280 x 960	75.00	75.00	1024 x 768			
SXGA85b	1280 x 960	85.94	85.00	1024 x 768			
SXGA60	1280 x 1024	63.98	60.02	960 x 768	x	x	x
SXGA75	1280 x 1024	79.98	75.02	960 x 768	x		
SXGA85	1280 x 1024	91.15	85.02	960 x 768			
SXGA+60	1400 x 1050	63.98	60.02	960 x 768			
	1400 x 1050	65.32	59.98	1024 x 768	x	x	x
SXGA+75	1400 x 1050	82.28	74.87	1024 x 768			
WSXGA+60	1680 x 1050	65.29	59.95	1024 x 640			
MAC13	640 x 480	35.00	66.67	1024 x 768	x		
MAC16	832 x 624	49.72	74.55 4	1024 x 768	x		
MAC19	1024 x 768	60.24	75.02	1024 x 768			
HP75	1024 x 768	62.94	74.92	1024 x 768			
HP72	1280 x 1024	78.13	72.00	960 x 768			
SUN66a	1152 x 900	61.85	66.00	983 x 768			
SUN76a	1152 x 900	71.81	76.64	983 x 768			
SUN66	1280 x 1024	71.68	66.68	960 x 768			
SUN76	1280 x 1024	81.13	76.11	960 x 768			
SGI72	1280 x 1024	76.92	72.30	960 x 768			
SGI76	1280 x 1024	82.01	76.00	960 x 768			
UXGA60	1600 x 1200	75.00	60.00	1024 x 768	x	x	x
WUXGA60	1920 x 1200	74.04	59.95	1024 x 640			

Signals described in the Signal mode column can be input regardless of the x mark in the Plug and Play column. For signals not marked with x in the Plug and Play column, the resolution may not be supported even when it is supported on the computer.

13.7 Specification of RGB signals in each computer mode of the projector

Important

- Some computers aren't compatible with the projector.
- The projector's maximum resolution is 1920 x 1200 pixels (PHWU-81B), 1280 x 800 pixels (PHWX- 81B), or 1024 x 768 pixels (PHXG-91B). It may not display images of higher resolutions than its maximum resolution correctly.
- Images with SYNC on G (Green) signal may jitter.
- Images with SYNC on G (Green) signal may be tinged with green
- If the resolution and frequency of your computer aren't shown on the table, find the compatible resolution and frequency by changing the resolution of your computer.
- TV60 and TV50 are equivalent to 480i and 576i respectively. When these signals are supplied to the VIDEO IN or S-VIDEO IN terminal, the signal mode is indicated as TV60 or TV50. When they are supplied to the COMPUTER/COMPONENT VIDEO IN terminals, the signal mode is indicated as 480i or 576i.
- This projector doesn't support 480p signals from video devices having 4 lines (R, G, B, CS*) or having 5 lines (R, G, B, H, V).,-

NATIVE mode (for PHWU-81B/PHWX-81B only)

When moire patterns or lines of uneven thickness appear on the projected image, these symptoms may be improved by displaying it in its original image size (NATIVE mode). To display the image in the NATIVE mode, set ASPECT of the SIGNAL menu to NATIVE.12691

- For signals that are larger than the panel resolution, only their center part is displayed in the NATIVE mode. The area exceeding the panel resolution isn't displaye
- In the NATIVE mode, images are black-framed when the image resolution is lower than the panel resolution.
- In the NATIVE mode, some signals may be displayed with a black frame even when they have a higher resolution than the panel resolution.

Available signal system for SDI (for PHWU-81B only)

SD-SDI	480i
	576i
HD-SDI	720/50p
	720/60p
	1080/50i
	1080/60i
	1080/24p
3G-SDI	1080/50p
	1080/60p

The signal format supports 1/1.001.

13.8 Dimensions

Overview

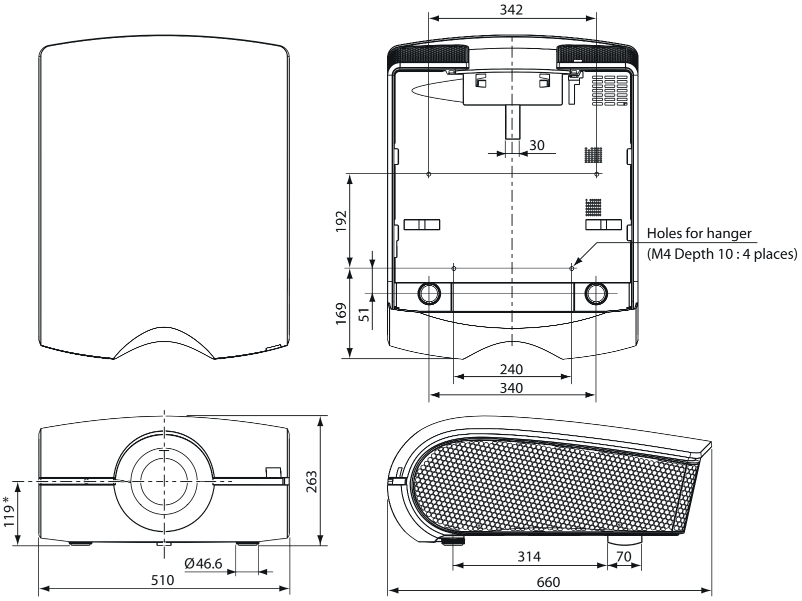

342
30
192
169
51
Holes for hanger
(M4 Depth 10 : 4 places)
240
340
263
119*
Ø46.6
510
314
70
660

Image 13-1

* = factory defaults

13.9 Connectors

SERIAL IN/OUT (D-SUB 9-pin) 5 1

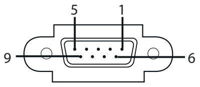


Image 13-2

Pin No.	Name	I/O
1	-	-
2	TXD	IN
3	RXD	OUT
4	-	-
5	GND	-
6	-	-
7	-	-
8	-	-
9	-	-

COMPUTER/COMPONENT VIDEO IN-1 (Mini D-SUB 15-pin)

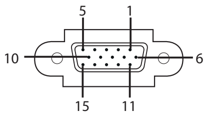


Image 13-3

Pin No.	Spec
1	R(RED)/PR/CR
2	G(GREEN)/Ye

Pin No.	Spec
3	B(BLUE)/PB/CB
4	GND
5	GND
6	GND
7	GND
8	GND
9	DDC 5V
10	GND
11	GND
12	DDC Data
13	HD/CS
14	VD
15	DDC Clock

COMPUTER/COMPONENT VIDEO DVI-D IN (HDCP) (DVI-D 24-pin)

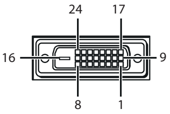


Image 13-4

Pin No.	Spec
1	TMDS DATA 2-
2	TMDS DATA 2+
3	TMDS DATA 2 Shield
4	-
5	-
6	DDC Clock
7	DDC Data
8	-
9	TMDS DATA 1-
10	TMDS DATA 1+
11	TMDS DATA 1 Shield
12	-
13	-
14	+5V Power
15	Ground (for +5V)
16	Hot plug detection
17	TMDS DATA 0-
18	TMDS DATA 0+
19	TMDS DATA 0 Shield
20	-
21	-
22	TMDS Clock Shield
23	TMDS Clock+
24	TMDS Clock-

HDMI IN (HDMI connector)

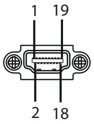


Image 13-5

Pin No.	Spec
1	TMDS DATA 2+
2	TMDS DATA 2 Shield
3	TMDS DATA 2-
4	TMDS DATA 1+
5	TMDS DATA 1 Shield
6	TMDS DATA 1-
7	TMDS DATA 0+
8	TMDS DATA 0 Shield
9	TMDS DATA 0-
10	TMDS Clock+
11	TMDS Clock Shield
12	TMDS Clock-
13	CED
14	-
15	SCL
16	SDA
17	DCC Ground
18	+5V Power
19	Hot Plug Detection

A. OPTION LENS H LENS 0.8-1.0, 2.8-4.5 OR 4.5-8.7

CAUTION: Lens mounting must be performed by service personnel.

A.1 Lens mounting procedure

Preparation

Check that the lens shift is at the factory default position (or the lens shift reset position) before mounting the option lens.

Be sure to turn off the projector and unplug the power cord from the wall outlet before mounting the option lens.

When you have any inquiries, contact your dealer.

How to mount

1. Loosen two screws (a) on the rear and two screws (b) on the side that are securing the side cover (c) using a Phillips screwdriver.

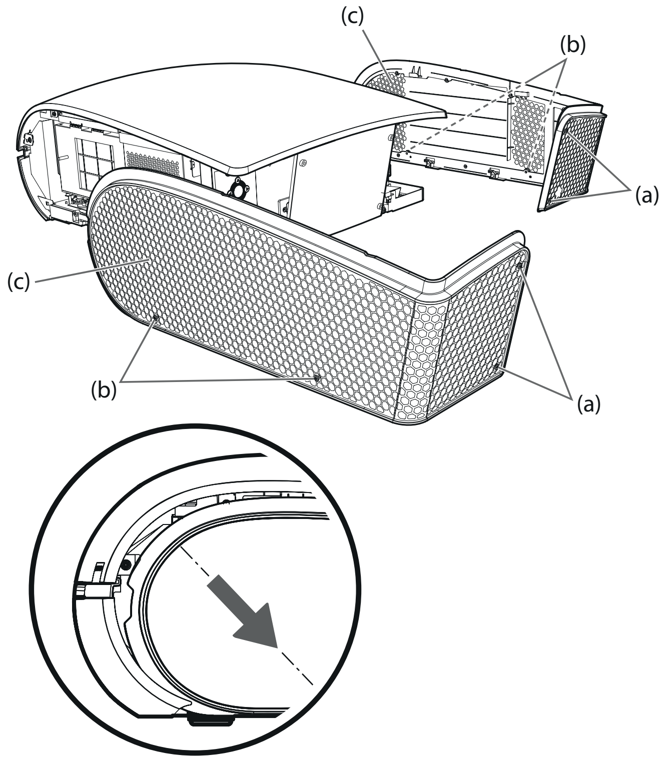


Image A-1
Side cover removal

2. Slide and remove the side cover towards the rear.
3. Remove the six screws (c) securing the Top cover. (There are three screws each on the left and right.)
   Release the Top cover in the direction of the arrow (d) from the unit.

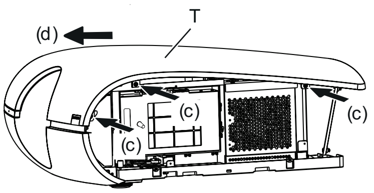


Image A-2
Top cover removal

T Top cover

4. Release the connector (e) for the zoom/focus motor of the standard lens.

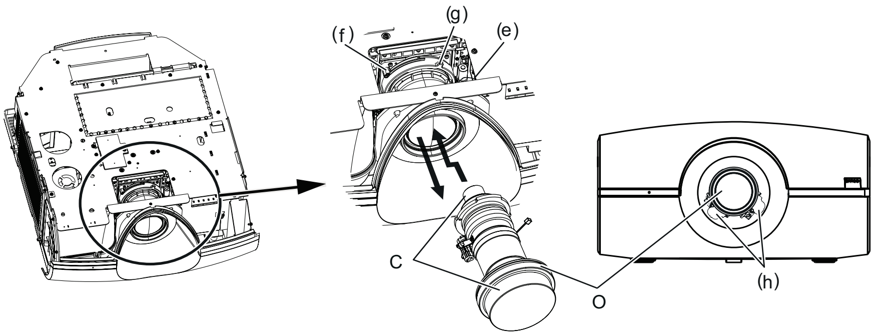


Image A-3
Lens removal

C	Lens caps
O	Optional lens

5. While holding down the lock button (f), slightly turn the fixed ring (g) counterclockwise to release the lock.
6. While holding the lens to prevent it from falling, turn the fixed ring (g) fully counterclockwise to unlock the lens.
7. Remove the standard lens in the arrow's direction.
8. Attach the option lens in the arrow's direction so that the motors (h) are positioned as shown by the figure. (Remove the lens caps before attaching the option lens.)
9. Turn the fixed ring (g) until it is put into place (and the lock button (f) clicks into place) to secure it.

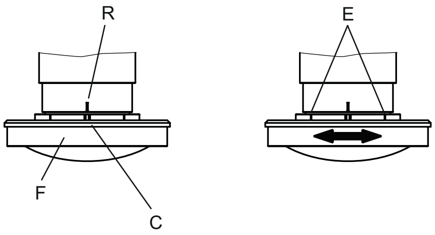


Image A-4

R	Reference line
E	Edge scale
F	Focus correction ring
C	Center scale

10. Lock the connector for the zoom/focus motor of the option lens.
11. Mount the top cover in the reverse order of removal.
12. Mount the side cover of the left and right in the reverse order of removal.

A.2 Focus correction function

Only for H LENS 0.8-1.0

What can be done?

H LENS 0.8-1.0 has the focus correction function that corrects the focus balance at and around the center of the screen.

Focus correction procedure

1. Align the center scale of the focus correction ring with the reference line.
2. Adjust the screen focus using the projector.

   Normally, the screen focus is adjusted properly using the procedure described above. However, the focus balance at and around the center of the screen may be different depending on the characteristics of the lens and the projector. In such a case, following the procedure described below may improve the symptom.

Improvement procedure

1. Turn the focus correction ring clockwise or counterclockwise manually and align the edge scale with the reference line.2
2. Adjust the screen focus using the projector.

A.3 Check after mounting the lens

Overview

After replacing the lens, be sure to check the following for ensuring safety.

- Check that the connector for the zoom/focus motor is locked securely.
- Check that no lead wires are caught in mechanical parts.

Cautions after mounting

- Do not transport the projector with the option lens mounted. The projector may be damaged.
- With the option lens mounted, the brightness, resolution, and color uniformity in the projected image may differ from those with the standard lens.
- With the option lens mounted, the adjustable angle in the keystone adjustment differs from that with the standard lens.
- In the keystone adjustment with the option lens mounted, the proper aspect ratio may not be obtained.
- Projected images may become distorted, have decreased resolution, or have shadows at their corners if they are positioned close to the top (or bottom in the case of a ceiling-mount projector) or right or left edge of the effective projection area shown on the right.
- For details about ZOOM/FOCUS adjustment and LENS SHIFT LOCK, see User Manual of the projector.

Be careful not to caught in the opening in the lens while the lens is moving.

A.4 Cleaning of the lens

Overview

Remove dust or dirt using the commercially available lens care products (such as cleaning paper or cloth for lens and blower brush).

- Since the lens surface is sensitive, do not scrub it with a solid object or tap on it.
- Do not wipe the lens with lens cleaner or solvent containing alcohol. Doing so may cause wipe marks or peel off the lens coating and the focus performance may be affected.
- Make sure to clean the lens after the lamp is turned off and the lens is cooled sufficiently.

A.5 Specifications H LENS 0.8-1.0

General

F No. : F24

Focal distance : f=11.4-14.2 mm

Zoom/focus : electrical drive

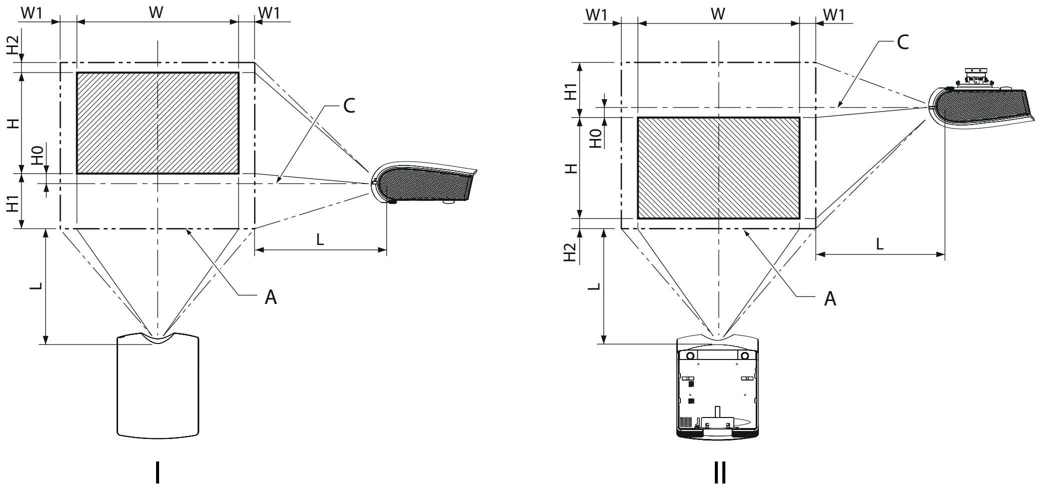


Image A-5

I Fornt projection
II Front projection, ceiling mounted
A Maximum projection area
C Center of the lens

XGA model with H LENS 0.8-1.0

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (4:3)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shorter (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	25	0.6	31	0.8	12	30	2	6	3	8
60	152	48	122	36	91	38	1.0	47	1.2	18	46	3	9	5	12
80	203	64	163	48	122	51	1.3	64	1.6	24	61	4	11	6	16
100	254	80	203	60	152	64	1.6	80	2.0	30	76	6	14	8	20
150	381	120	305	90	229	96	2.4	120	3.1	45	114	8	21	12	30
200	508	160	406	120	305	128	3.3	161	4.1	60	152	11	28	16	41
250	635	200	508	150	381	161	4.1	201	5.1	75	191	14	36	20	51
300	762	240	610	180	457	193	4.9	242	6.1	90	229	17	43	24	61

WXGA model with H LENS 0.8-1.0

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shorter (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	27	0.7	34	0.9	10	25	5	12	3	9
60	152	51	129	32	81	41	1.0	51	1.3	15	37	7	17	5	13
80	203	68	172	42	108	55	1.4	68	1.7	19	49	9	23	7	17
100	254	85	215	53	135	68	1.7	86	2.2	24	62	11	29	9	22
150	381	127	323	79	202	103	2.6	129	3.3	36	92	17	43	13	33
200	508	170	431	106	269	138	3.5	173	4.4	49	123	23	58	17	44
250	635	212	538	132	337	173	4.4	216	5.5	61	154	28	72	21	55
300	762	254	646	159	404	208	5.3	260	6.6	73	185	34	86	26	65

WUXGA model with H LENS 0.8-1.0

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shorter (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	25	0.6	32	0.8	10	26	4	10	3	8
60	152	51	129	32	81	39	1.0	49	1.2	15	39	6	15	5	12
80	203	68	172	42	108	52	1.3	65	1.7	21	52	8	20	7	17
100	254	85	215	53	135	65	1.7	82	2.1	26	66	10	25	8	21
150	381	127	323	79	202	98	2.5	123	3.1	39	98	15	37	12	31
200	508	170	431	106	269	131	3.3	165	4.2	52	131	20	50	16	42

---

[9] The lens shift height and width show distances from the factory default position.

250	635	212	538	132	337	165	4.2	206	5.2	65	164	24	62	20	52
300	762	254	646	159	404	198	5.0	248	6.3	77	197	29	75	25	62

A.6 Specifications H LENS 2.8-4.5

General

F No. : F2.2-2.7

Focal distance : f=40.7-65.1 mm

Zoom/focus : electrical drive

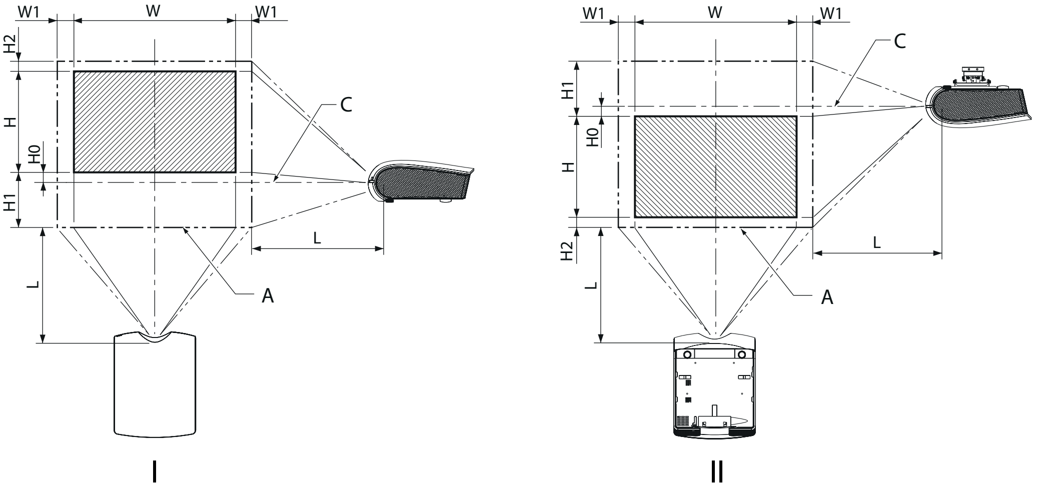


Image A-6
I Fornt projection
II Front projection, ceiling mounted
A Maximum projection area
C Center of the lens

XGA model with H LENS 2.8-4.5

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (4:3)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shortest (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	-	-	148	3.8	12	30	2	6	3	8
60	152	48	122	36	91	136	3.5	224	5.7	18	46	3	9	5	12
80	203	64	163	48	122	183	4.7	301	7.6	24	61	4	11	6	16
100	254	80	203	60	152	230	5.8	377	9.630	9.6	76	6	14	8	20
150	381	120	305	90	229	348	8.8	568	14.4	45	114	8	21	12	30
200	508	160	406	120	305	465	11.8	759	19.3	60	152	11	28	16	41
250	635	200	508	150	381	583	14.8	951	24.1	75	191	14	36	20	51
300	762	240	610	180	457	701	17.8	1142	29.0	90	229	17	43	24	61

WXGA model with H LENS 2.8-4.5

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		Width (W)		Height (H)		Shortest (Wide)		Longest (Tele)		Movement distance (H1)		Movement distance (H2)		Movement distance (W1)	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm

Screen size (16:10)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
40	102	34	86	21	54	-	-	159	4.0	10	25	5	12	3	9
60	152	51	129	32	81	147	3.7	241	6.1	15	37	7	17	5	13
80	203	68	172	42	108	197	5.0	323	8.2	19	49	9	23	7	17
100	254	85	215	53	135	248	6.3	406	10.3	24	62	11	29	9	22
150	381	127	323	79	202	374	9.5	611	15.5	36	92	17	43	13	33
200	508	170	431	106	269	500	12.7	816	20.7	49	123	23	58	17	44
250	635	212	538	132	337	627	15.9	1021	25.9	61	154	28	72	21	55
300	762	254	646	159	404	753	19.1	1227	31.2	73	185	34	86	26	65

WUXGA model with H LENS 2.8-4.5

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						Projector distance (L)				Lens shift height[9]				Lens shift width	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	-	-	151	3.8	10	26	4	10	3	8
60	152	51	129	32	81	139	3.5	229	5.8	15	39	6	15	5	12
80	203	68	172	42	108	187	4.8	308	7.8	21	52	8	20	7	17
100	254	85	215	53	135	235	6.0	386	9.8	26	66	10	25	8	21
150	381	127	323	79	202	355	9.0	581	14.8	39	98	15	37	12	31
200	508	170	431	106	269	475	12.1	776	19.7	52	131	20	50	16	42
250	635	212	538	132	337	595	15.1	972	24.7	65	164	24	62	20	52
300	762	254	646	159	404	716	18.2	1167	29.6	77	197	29	75	25	6

A.7 Specifications H LENS 4.5-8.7

General

F No. : F2.8

Focal distance : f=64.5-125.5 mm

Zoom/focus : electrical drive

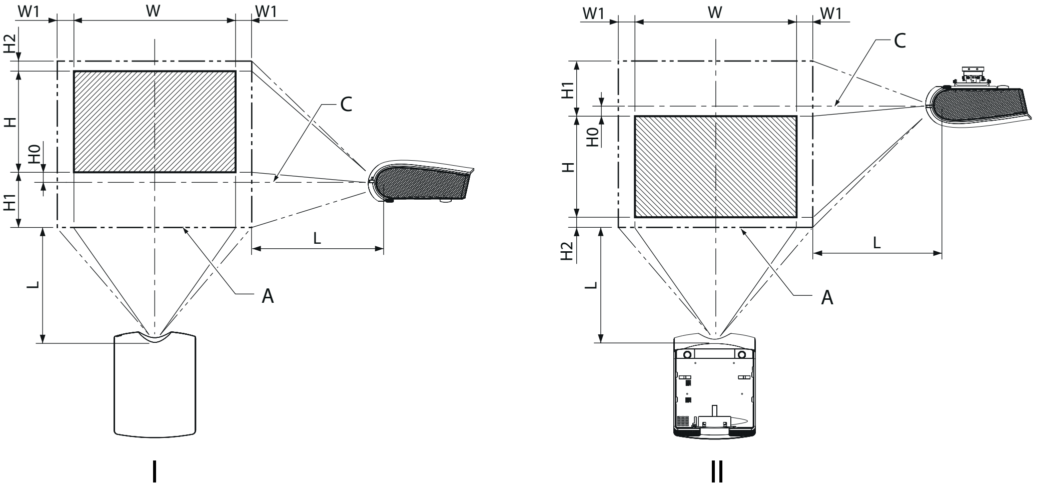


Image A-7
I Fornt projection
II Front projection, ceiling mounted
A Maximum projection area
C Center of the lens

XGA model with H LENS 4.5-8.7

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (4:3)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
60	152	48	122	36	91	229	5.8	437	11.1	18	46	3	9	5	12
80	203	64	163	48	122	302	7.7	581	14.8	24	61	4	11	6	16
100	254	80	203	60	152	376	9.5	724	18.4	30	76	6	14	8	20
150	381	120	305	90	229	560	14.2	1082	27.5	45	114	8	21	12	30
200	508	160	406	120	305	744	18.9	1440	36.6	60	152	11	28	16	41
250	635	200	508	150	381	928	23.6	-	-	75	191	14	36	20	51
300	762	240	610	180	457	1113	28.3	-	-	90	229	17	43	24	61

WXGA model with H LENS 4.5-8.7

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
60	152	51	129	32	81	245	6.2	469	11.9	15	37	7	17	5	13
80	203	68	172	42	108	324	8.2	623	15.8	19	49	9	23	7	17
100	254	85	215	53	135	403	10.2	777	19.7	24	62	11	29	9	22
150	381	127	323	79	202	601	15.3	1162	29.5	36	92	17	43	13	33
200	508	170	431	106	269	799	20.3	1547	39.3	49	123	23	58	17	44
250	635	212	538	132	337	997	25.3	-	-	61	154	28	72	21	55
300	762	254	646	159	404	1194	30.3	-	-	73	185	34	86	26	65

WUXGA model with H LENS 4.5-8.7

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height**[9]				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shorter (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
60	152	51	129	32	81	234	5.9	447	11.4	15	39	6	15	5	12
80	203	68	172	42	108	309	7.8	594	15.1	21	52	8	20	7	17
100	254	85	215	53	135	384	9.8	740	18.8	26	66	10	25	8	21
150	381	127	323	79	202	573	14.5	1107	28.1	39	98	15	37	12	31
200	508	170	431	106	269	761	19.3	1473	37.4	52	131	20	50	16	42
250	635	212	538	132	337	950	24.1	-	-	65	164	24	62	20	52
300	762	254	646	159	404	1138	28.9	-	-	77	197	29	75	25	62

B. OPTIONAL LENS H LENS 1.3-1.8

CAUTION: Lens mounting must be performed by service personnel.

B.1 Lens mounting procedure

Preparation

Be sure to turn off the projector and unplug the power cord from the wall outlet before mounting the option lens.

When you have any inquiries, contact your dealer.

How to mount

1. Remove the lens cover.

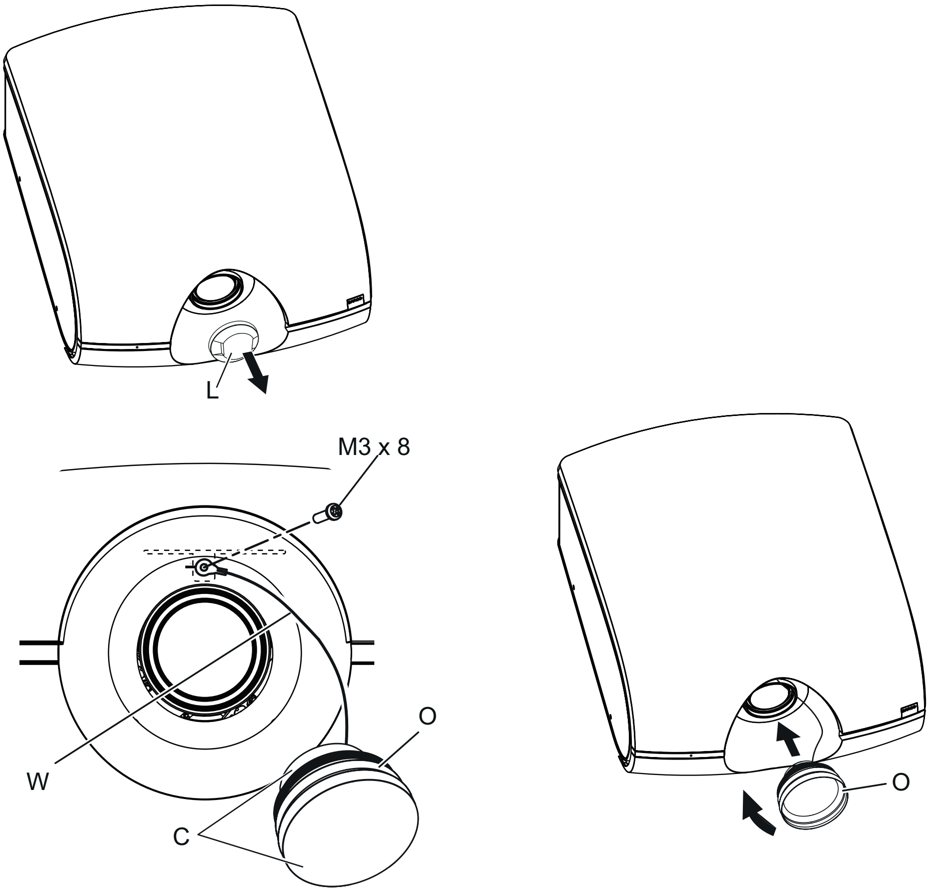


Image B-1

L	Lens cover
W	Wire and eyelet
C	Lens caps
O	option lens

2. Fit the wire and eyelet of the option lens to the projector using the attached screw.

   This prevents the option lens from dropping.

3. Remove the lens caps of the option lens.

4. Mount the option lens to the standard lens turning it clockwise.
   Note: *Protect your eyes and face from the swinging wire when mounting the option lens.*

Cautions after mounting

- Do not transport the projector with the option lens mounted. The projector may be damaged.
- With the option lens mounted, the brightness, resolution, and color uniformity in the projected image may differ from those with the standard lens.
- With the option lens mounted, the adjustable angle in the keystone adjustment differs from that with the standard lens.
- In the keystone adjustment with the option lens mounted, the proper aspect ratio may not be obtained.
- Projected images may become distorted, have decreased resolution, or have shadows at their corners if they are positioned close to the top (or bottom in the case of a ceiling-mount projector) or right or left edge of the effective projection area shown on the right.
- For details about ZOOM/FOCUS adjustment and LENS SHIFT LOCK, see User Manual of the projector.

Be careful not to caught in the opening in the lens while the lens is moving.

B.2 Specifications H LENS 1.3-1.8

General

F No. : F2.0-2.4

Focal distance : f=19.6-26.5 mm

Zoom/focus : electrical drive

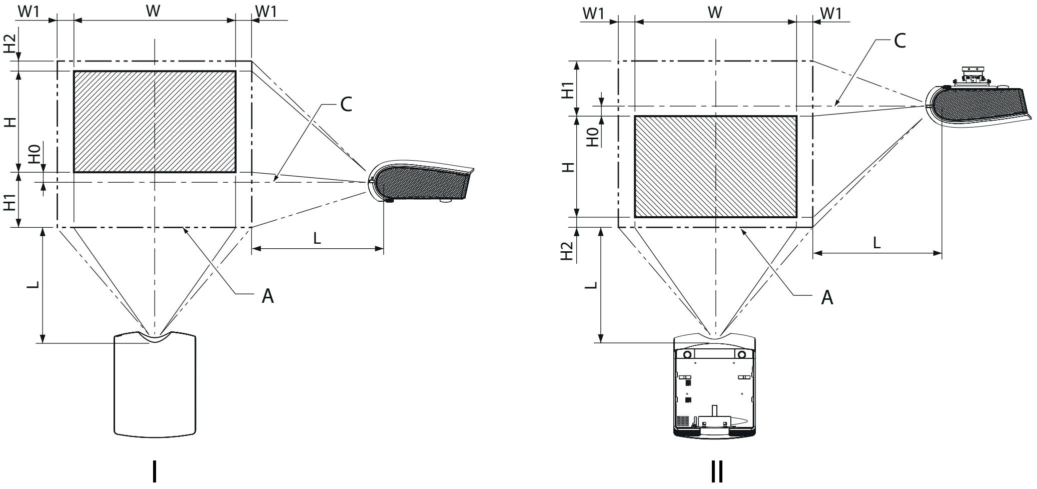


Image B-2
I Fornt projection
II Front projection, ceiling mounted
A Maximum projection area
C Center of the lens

XGA model with H LENS 1.3-1.8

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (4:3)						**Projector distance (L)**				**Lens shift height**[9]				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	41	1.0	57	1.5	12	30	2	6	3	8
60	152	48	122	36	91	63	1.6	88	2.2	18	46	3	9	5	12
80	203	64	163	48	122	86	2.2	118	3.0	24	61	4	11	6	16
100	254	80	203	60	152	108	2.7	148	3.8	30	76	6	14	8	20
150	381	120	305	90	229	164	4.2	224	5.7	45	114	8	21	12	30

Screen size (4:3)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
200	508	160	406	120	305	219	5.6	300	7.6	60	152	11	28	16	41
250	635	200	508	150	381	275	7.0	-	-	75	191	14	36	20	51
300	762	240	610	180	457	331	8.4	-	-	90	229	17	43	24	61

WXGA model with H LENS 1.3-1.8

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	44	1.1	62	1.6	10	25	5	12	3	9
60	152	51	129	32	81	68	1.7	94	2.4	15	37	7	17	5	13
80	203	68	172	42	108	92	2.3	127	3.2	19	49	9	23	7	17
100	254	85	215	53	135	116	3.0	160	4.1	24	62	11	29	9	22
150	381	127	323	79	202	176	4.5	241	6.1	36	92	17	43	13	33
200	508	170	431	106	269	236	6.0	323	8.2	49	123	23	58	17	44
250	635	212	538	132	337	296	7.5	-	-	61	154	28	72	21	55
300	762	254	646	159	404	356	9.0	-	-	73	185	34	86	26	65

WUXGA model with H LENS 1.3-1.8

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	42	1.1	59	1.5	10	26	4	10	3	8
60	152	51	129	32	81	65	1.6	90	2.3	15	39	6	15	5	12
80	203	68	172	42	108	87	2.2	121	3.1	21	52	8	20	7	17
100	254	85	215	53	135	110	2.8	152	3.9	26	66	10	25	8	21
150	381	127	323	79	202	167	4.2	229	5.8	39	98	15	37	12	31
200	508	170	431	106	269	224	5.7	307	7.8	52	131	20	50	16	42
250	635	212	538	132	337	281	7.1	-	-	65	164	24	62	20	52
300	762	254	646	159	404	338	8.6	-	-	77	197	29	75	25	62

B.3 Specifications H LENS 2.2-2.7

General

F No. : F2.1-2.4

Focal distance : f=32.4-40.5 mm

Zoom/focus : electrical drive

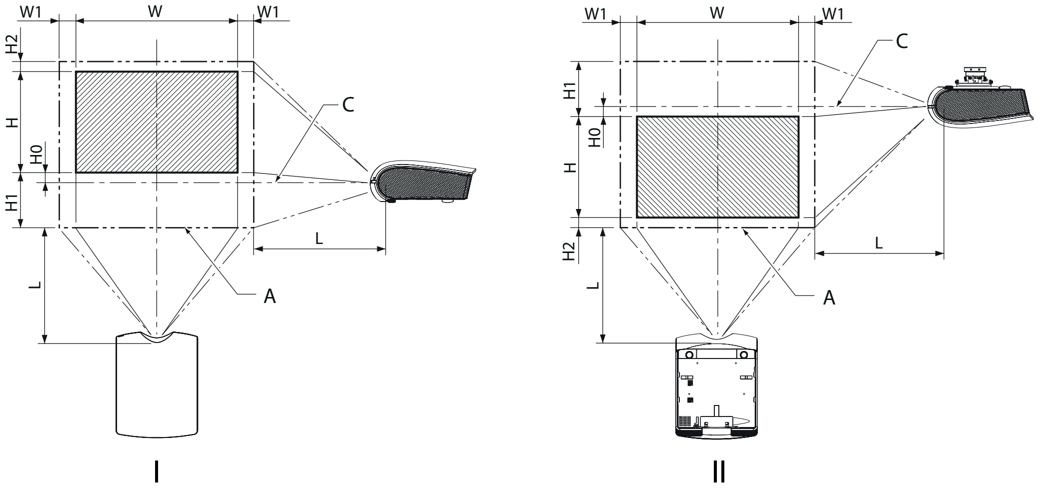


Image B-3

XGA model with H LENS 2.2-2.7

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (4:3)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)[10]**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	32	81	24	61	-	-	88	2.2	12	30	2	6	3	8
60	152	48	122	36	91	105	2.7	135	3.4	18	46	3	9	5	12
80	203	64	163	48	122	142	3.6	182	4.6	24	61	4	11	6	16
100	254	80	203	60	152	180	4.6	228	5.8	30	76	6	14	8	20
150	381	120	305	90	229	273	6.9	345	8.8	45	114	8	21	12	30
200	508	160	406	120	305	366	9.3	462	11.7	60	152	11	28	16	41
250	635	200	508	150	381	459	11.7	579	14.7	75	191	14	36	20	51
300	762	240	610	180	457	553	14.0	696	17.7	90	229	17	43	24	61

WXGA model with H LENS 2.2-2.7

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height[9]**				**Lens shift width**	
Diagonal size		**Width (W)[10]**		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	-	-	95	2.4	10	25	5	12	3	9
60	152	51	129	32	81	113	2.9	145	3.7	15	37	7	17	5	13
80	203	68	172	42	108	153	3.9	196	5.0	19	49	9	23	7	17
100	254	85	215	53	135	193	4.9	246	6.2	24	62	11	29	9	22
150	381	127	323	79	202	294	7.5	371	9.4	36	92	17	43	13	33
200	508	170	431	106	269	394	10.0	497	12.6	49	123	23	58	17	44
250	635	212	538	132	337	494	12.5	623	15.8	61	154	28	72	21	55
300	762	254	646	159	404	594	15.1	748	19.0	73	185	34	86	26	65

WUXGA model with H LENS 1.3-1.8

The numbers are approximate and may be slightly different from the actual measurements.

Screen size (16:10)						**Projector distance (L)**				**Lens shift height**[9]				**Lens shift width**	
Diagonal size		**Width (W)**[10]		**Height (H)**		**Shortest (Wide)**		**Longest (Tele)**		**Movement distance (H1)**		**Movement distance (H2)**		**Movement distance (W1)**	
inch	cm	inc	cm	inch	cm	inch	m	inch	m	inch	cm	inch	cm	inch	cm
40	102	34	86	21	54	-	-	89	2.3	10	26	4	10	3	8
60	152	51	129	32	81	107	2.7	137	3.5	15	39	6	15	5	12
80	203	68	172	42	108	146	3.7	185	4.7	21	52	8	20	7	17
100	254	85	215	53	135	184	4.7	233	5.9	26	66	10	25	8	21
150	381	127	323	79	202	279	7.1	353	9.0	39	98	15	37	12	31
200	508	170	431	106	269	374	9.5	473	12.0	52	131	20	50	16	42
250	635	212	538	132	337	470	11.9	592	15.0	65	164	24	62	20	52
300	762	254	646	159	404	565	14.4	712	18.1	77	197	29	75	25	62

---

[10] When the lens is set to wide to the full, the screen corners are shaded depending on the lens shift position.

C. ENVIRONMENTAL INFORMATION

C.1 Disposal information

Disposal Information

Waste Electrical and Electronic Equipment

This symbol on the product indicates that, under the European Directive 2012/19/EU governing waste from electrical and electronic equipment, this product must not be disposed of with other municipal waste. Please dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources.

For more information about recycling of this product, please contact your local city office or your municipal waste disposal service.

For details, please visit the Barco website at: http://www.barco.com/en/AboutBarco/weee

Disposal of batteries in the product

This product contains batteries covered by the Directive 2006/66/EC which must be collected and disposed of separately from municipal waste.

If the battery contains more than the specified values of lead (Pb), mercury (Hg) or cadmium (Cd), these chemical symbols will appear below the crossed-out wheeled bin symbol.

By participating in separate collection of batteries, you will help to ensure proper disposal and to prevent potential negative effects on the environment and human health.

C.2 Rohs compliance

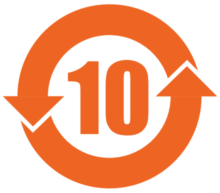
Turkey RoHS compliance

Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur.

[Republic of Turkey: In conformity with the WEEE Regulation]

中国大陆 RoHS (Information for China ROHS compliance)

(1)电子信息产品污染控制标识 (3)根据包装回收标志(GB/T18455-2010) 根据2006/2/28公布的“电子信息产品污染控制管理办法”，这个标记是适用于在中国销售的电子信息产品的环境保护使用期限。只要能遵守本产品在安全和使用方面的注意事项，从生产日算起的年限以内，不会对环境污染，人体，财产产生深刻的影响。



注：此环境保护使用期限并不包含消耗品（电池等）。

产品正常使用终结废弃时，有关电子信息产品的回收、再利用等要遵守各自治体的法律法规的要求。

(2)含有有害6物质的名称，含有量，含有部品

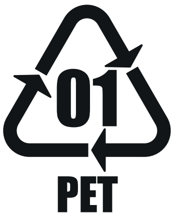
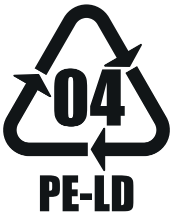
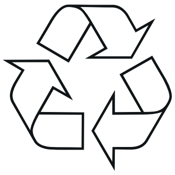
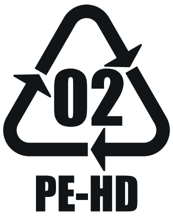
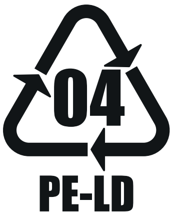
本产品中所含有的有害6物质的名称，含有量，含有部品如下表所示。

产品中有毒有害物质或元素的名称及含量

部件名称	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
实装基板	x	o	o	o	o	o
框架	x	o	o	o	o	o
光学单元	x	x	o	o	o	o
遥控器	x	o	o	o	o	o
电缆类	x	o	o	o	o	o
灯泡	x	x	o	o	o	o
备注(○或×的表示意思)						
○:表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006标准规定的限量要求以下。						
×:表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006标准规定的限量要求。						
1. 零部件名称的“框架”,包括外部框架及内部构件。						

(3)根据包装回收标志(GB/T18455-2010)

废弃包装器材时,有关包装器材的回收、再利用等请遵守地方自治体的相关法律法规的要求。

	电池包装膜
	随包装物品袋 缓冲材料
	外包装箱 / 隔板 随包装物品带(CD-ROM袋)
: 表面 : 背面	产品包装膜 随包装物包装布

C.3 Address

进口商:巴可伟视(北京)电子有限公司

进口商地址:北京市昌平区昌平科技园昌盛路16号日本国 京都制造

Factory

MITSUBISHI ELECTRIC CORPORATION, KYOTO WORKS

1 Zusho Baba, Nagaokakyo City,

Kyoto, 617-8550, Japan

GLOSSARY

Default Gateway

A server (or router) to communicate across networks (subnets) that are divided by Subnet Mask.

DHCP

Abbreviation for Dynamic Host Configuration Protocol. This protocol automatically assigns IP Address to networked devices.

IP Address

Numerical address to identify networked computers.

MAC Address

Abbreviation for Media Access Control Address. MAC Address is a unique ID number assigned to each network adapter. And this is based on which data are sent and received between network adapters.

Subnet Mask

A numeric value to define the number of bits used for a network address of a divided network (or subnet) in an IP Address.

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